CE

United States Department of the Interior
Bureau of Land Management

Environmental Assessment

Encana Multi-Well Pad - Whittaker Flats D17 998

Grand Junction Field Office
2815 H Road
Grand Junction, Colorado 81506

DOI-BLM-CO-130-2012-0043-CX(390)

August 2012

PROJECT LOCATION AND LEGAL DESCRIPTION

Pad D17 9 98 - SWNW Section 17, T9S R98W, 6th PM, Mesa County

APPLICANT

Encana Oil & Gas (USA), Inc.
370 17TH Street, Ste. 1700, Denver CO 80202

INTRODUCTION

The project area lies within the *Bronco Flats* developed natural gas field, currently containing about 50 completed wells (COGCC). A new federal oil and gas unit, to be known as the Whittaker Flats Unit, was submitted by Encana in June 2012 for BLM approval and will include the project area. Unit approval is expected to be final in August or September 2012. Unitization is intended to facilitate orderly exploration and development of wells in a given area. The proposed six-well pad is also located within the area designated by the 1987 Grand Junction Resource Management Plan as *Emphasis Area Co-1,* for oil and gas development. 836 functional wells, of which 62 are federal, are currently located in the Co-1 Emphasis Area (COGCC).

On March 23, 2012, Encana submitted Notices of Staking (NOSs) for 6 wells on pad D17 998 (then known as pad E17 998) Encana submitted Applications for Permit to Drill (APDs) for 6 wells on pad D17 998 on June 7, 2012. BLM accepted the APDs as complete on July 11, 2012.

Project maps depict two other multi-well pads (K18 998 and A36 999) in the general area. NOSs for these locations were submitted with the NOS for pad D17 998, but no APDs have been submitted and the NOSs are likely to be returned to Encana. APDs may be submitted for them at a future date, at which time a separate NEPA document would be prepared.

All wells would access federal mineral estate. The pad would be located on federal lands roughly 9 miles west-southwest of the Town of DeBeque, in Mesa County, Colorado. The pad would be accessed by existing roads and any new pipelines would be co-located with roads.

Figures 1 and 2 show maps of well pad locations, including private and public lands, aerial views and existing roads. The well pad is planned to accommodate multiple gas wells for future field development, should exploratory wells prove to be economic. Figure 3 shows proposed well bores and bottom holes.

No lease stipulations, such as Winter Range or Steep Slopes, are associated with the project leases or the proposed location.

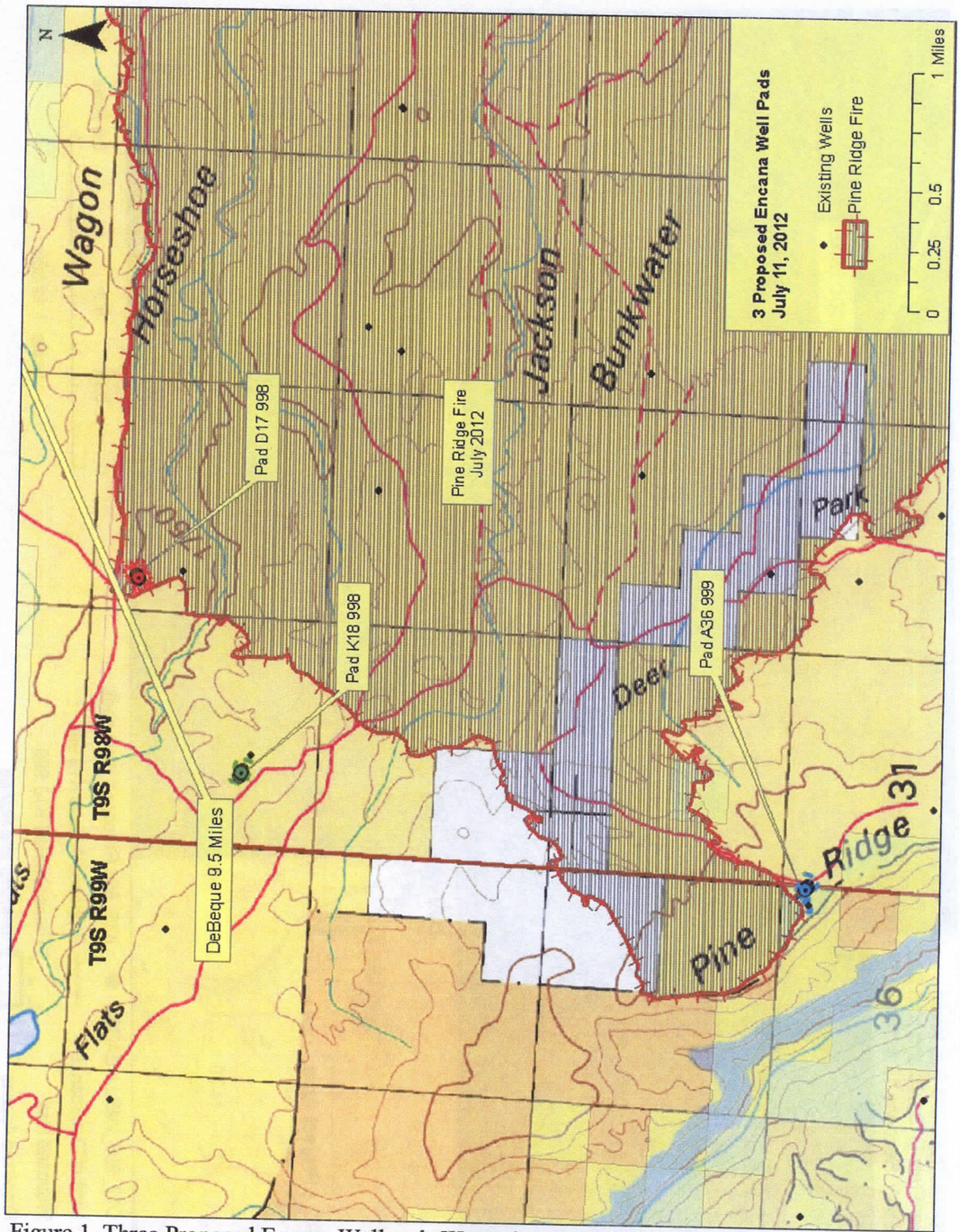


Figure 1. Three Proposed Encana Well pads West of DeBeque, Colorado

Figure 2. Proposed Pads D17 998 and K18 998

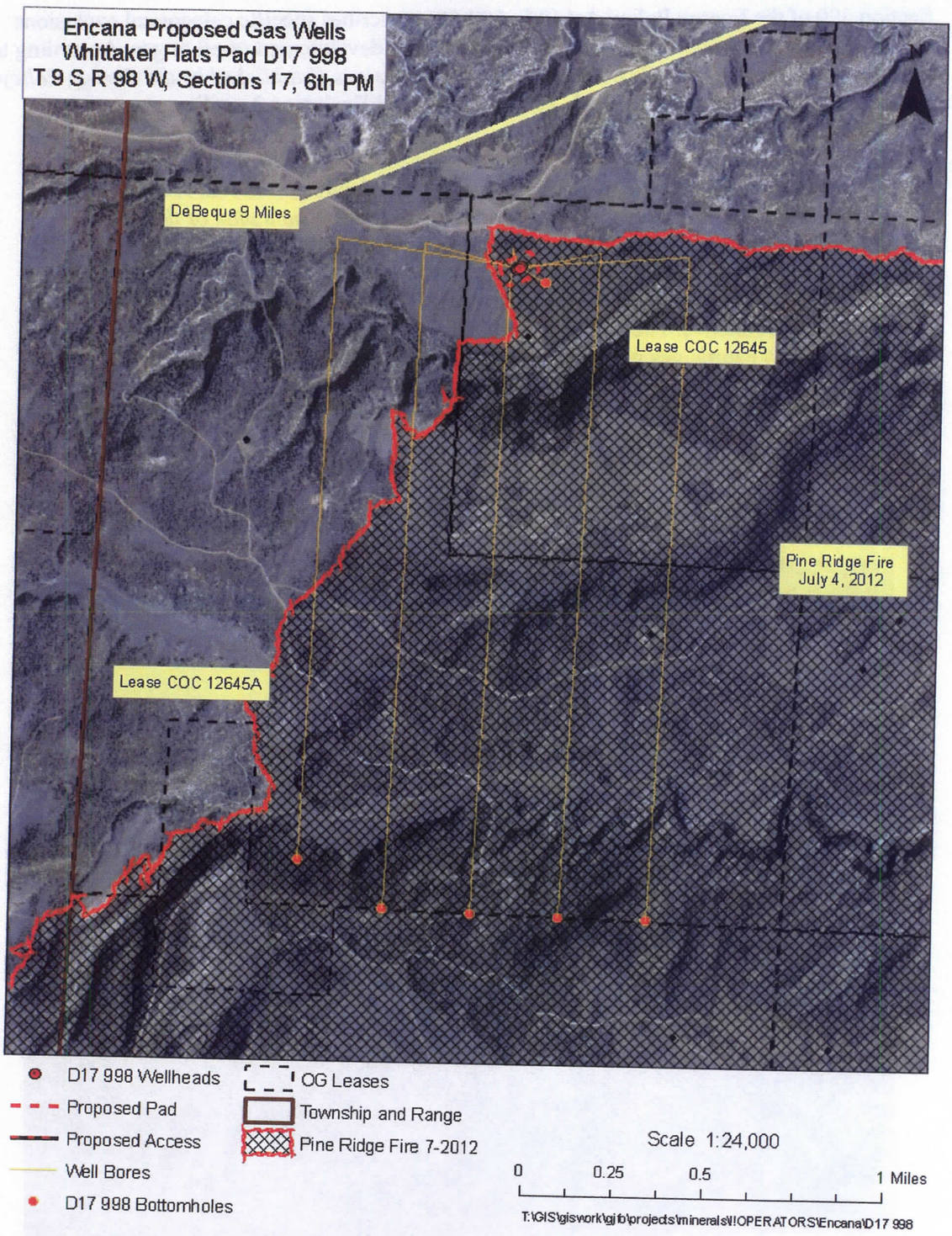


Figure 3. Proposed Pad D17 998, with Well Bores

Section 390 of the Energy Policy Act (P.L. 109-58) prescribes specific categorical exclusions (CXs) for activities whose purpose is for exploration or development of oil or gas. According to NEPA Handbook Appendix 2, *Using Categorical Exclusions Established by the Energy Policy Act of 2005* (BLM Manual H-1790-1, 2008), Categorical Exclusion 3 applies:

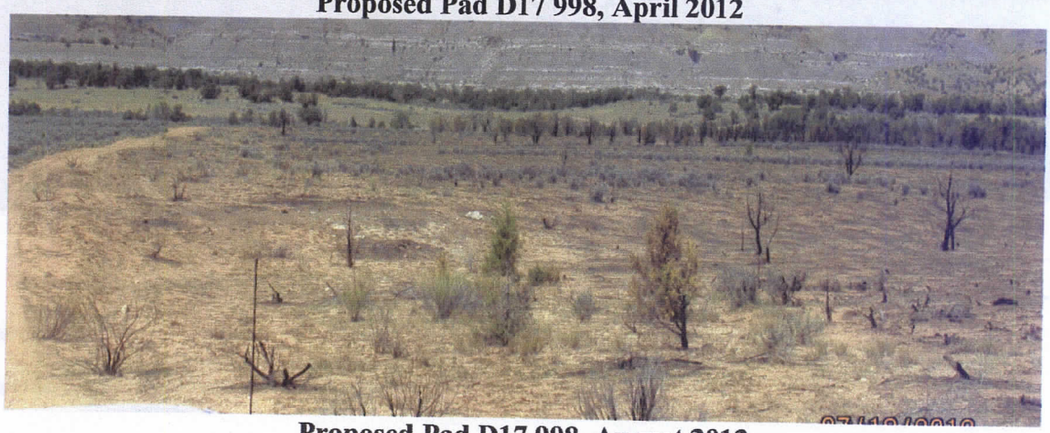
> *3. Drilling an oil or gas well within a developed field for which an approved land use plan or any environmental document prepared pursuant to NEPA analyzed drilling as a reasonably foreseeable activity, so long as such plan or document was approved within five years prior to the date of spudding the well.*

BLM-CO-130-2008-029-EA, for Winter Flats wells 10-43-99 and 11-43-100 is hereby incorporated by reference. The EA was approved on July 3, 2008. It analyzed and approved proposals for two natural gas wells in the Bronco Flats field:

Well Winter Flats 10-43-99: NENE, Section 10, T9S, R99W, 6th PM, Mesa County
Well Winter Flats 11-43-100: SESE, Section 11, T9S, R100W, 6th PM, Mesa County

PROPOSED ACTION – Encana's Surface Use Plan of Operations

Proposed Pad D17 998, April 2012



Proposed Pad D17 998, August 2012

Encana Oil & Gas (USA), Inc.
Federal Surface Use Plan of Operations, Pad D17 998
NWNW Sec. 17 T9S, R98W, Mesa County, CO

Lease No COC-12645

Well Number	Bottom Hole Locations
WHF DV04B-17 D17 998	NWNW Sec 17 T9S, R98W

Lease No COC-12645A

Well Number	Bottom Hole Locations
WHF DHS7C-20 D17 998	SWSW Sec 20 T9S, R98W
WHF DHS3C-19 D17 998	SWSE Sec 19 T9S, R98W
WHF DHS3C-20 D17 998	SWSE Sec 20 T9S, R98W
WHF DHS5C-20 D17 998	SESW Sec 20 T9S, R98W
WHF DHS1C-19 D17 998	SESE Sec 19 T9S, R98W

1. EXISTING ROADS

A. The proposed well-site is staked and reference stakes are present as shown on attached Topo maps.

B. Access Roads – refer to *Topo Maps "A" and "B".*

C. Access Roads within a one-mile radius – refer to *Topo Map "B".*

D. The existing roads will be maintained in the same or better condition as existed prior to the commencement of operations and said maintenance will continue until final abandonment and reclamation of the well location. Excessive rutting or other surface disturbance will be avoided.

E. From the intersection of Road Creek Road and 4th Street in DeBeque, Colorado. Go West on 4th Street 0.2 miles, turn left. Proceed South on Minter Avenue and then West on 2nd Street, 0.6 miles to V 2/10 Road, turn right. Proceed westerly on V 2/10 Road 10.9 miles to intersection with S Road on the left. Continue southerly on a field access road 0.1 miles to the staked access road on the left (east). Follow staked access road 190' east to the proposed D17 998 wellpad.

F. Total driving distance from DeBeque, Colorado is approximately 12 miles.

G. Onsite Inspection was held on April 11, 2011 with the BLM.

2. PLANNED ACCESS ROADS

Proposed access roads are shown on Topo Map "B".

A. The proposed roadway length to the Whittaker Flat D17 998 pad will be approximately 190' on the northwest side of the pad. Approximately 8.0 miles of existing road will be improved to all weather condition for safety considerations and the nature of anticipated truck traffic. All road work will be done according to BLM Manual Section 9113 standards.

B. Access road disturbance will be approximately 18'-22', with a 30' construction width.

C. The maximum grade on the proposed access road will be about 8%.

D. The topsoil along the road will be stripped. Topsoil berms will be constructed generally parallel to the road. When the road grading, culvert installations and gravel surfacing (if any) have been completed, topsoil will be redistributed to a

shallow berm parallel to the pipeline and drill or hydro-seed the berm (for erosion and weed control) for a long-term BMP during the life of the facility.

E. All cut and fill slopes will be seed bed prepped and revegetated.
F. A 24" Culvert will be installed at the entrance of the pad and bar ditches are required on the proposed access road.
G. No major cuts and fills on the road.
H. Three inch road base will be used for road surfacing.
I. Capping or sloping and dipping the roadbed as necessary to provide a well-constructed and safe road.
J. Prior to upgrading the roadway shall be cleared of any snow cover and allowed to dry completely.
K. No gates, cattle guards or fence cuts are required.
L. Road maintenance – during the drilling and production phase of operations, the road surface and shoulders will be kept in a safe and legal condition and will be maintained in accordance with the original construction standards. The access road will be kept free of trash during operations.
M. Dust will be controlled on the roads and locations during construction and drilling by periodic watering of the roads and locations.
N. If the well is a producer, Encana will upgrade and maintain access roads as necessary to prevent soil erosion, and accommodate year around traffic.
O. For more information on how the stormwater features of access roads are handled in the Preconstruction/Construction/Interim/Final Reclamation stages please refer to Roan Creek Area Stormwater Management Plan COR-039310 (July 2007) and General Reclamation Surface Management Guideline (March 2011). This plan is on file at the operator's field office and is available for review upon request.

3. LOCATION OF EXISTING WELLS WITHIN A ONE MILE RADIUS

Please refer to *Topo Map "C"*

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES

A. At each drill location, surface disturbance will be kept to a minimum. Each drill pad will be leveled using cut and fill construction techniques as noted in the attached survey.
B. Should drilling result in established commercial production the following will be shown:
    1. Proposed location and attendant lines, by flagging, if off well pad.
    2. Dimensions of facilities.
    3. Construction methods and materials.
    4. Protective measures and devices to protect livestock and wildlife.
    5. Road and pipelines will be co-located.
    6. Pipelines will be built at the same time as the road whenever possible.
    7. Pipeline and Road ROW disturbance will be overlapped as much as possible to minimize surface disturbance.
    8. Encana will need to install an up to 6" steel gas pipeline into a new 30' ROW. +/- 143' long x 30' width = 0.098 estimated acres of disturbance. Topo D
    It is our intention to bury these pipelines. All disturbances will be reclaimed according to landowner requirements.

The area used to contain the proposed production facilities will be built using native materials. If these materials are not acceptable, arrangements will be made to acquire appropriate materials from private sources.

9. A dike will be constructed completely around any production facilities which contain fluids (i.e. production tanks, produced water tanks, etc.). These dikes will be constructed of compacted subsoil, be impervious, be lined with a minimum 24 mil impermeable line, hold 110% of the capacity of the largest tank, and be independent of the back cut.
10. *All permanent (onsite for six months or longer) above-the-ground constructed or installed, including pumping units, will be painted a Shale Green. All production facilities will be painted within six months of installation. Facilities that are required to comply with Occupation Health and Safety Act Rules and Regulations will be excluded from this painting requirement.
11. If different production facilities are required, a sundry notice will be submitted.
12. All off-lease storage, off-lease measurement, or commingling on-lease or off-lease will have prior written approval from the BLM – Grand Junction Office.
13. The oil and gas measurement facilities will be installed on the well location. Oil and gate meters will be calibrated in place prior to any deliveries. The Field Office Petroleum Engineer will be provided with a date and time for the initial meter calibration and all future meter proving schedules. A copy of the meter calibration reports will be submitted to the BLM- Grand Junction Field Office, upon request. All meter measurement facilities will conform to the API standards for liquid hydrocarbons and the AGA standard for natural gas measurement
14. Any venting or flaring of gas will be done in accordance with notice of Lessees (NTL) 4A and may need prior approval from the Field Office Petroleum Engineer.
15. All production facilities will comply with Colorado Oil & Gas Conservation Commission Rules regarding noise. Regardless of whether the stage of operation. Adequate muffling techniques will be applied if necessary.
16. Run off and sediment Best Management Practices will be implemented and maintained according to the Roan Creek Area Storm Water Management Plan.
17. Encana Oil & Gas (USA) Inc. shall protect all survey monuments, witness corners, reference monuments and bearing trees in the affected areas against disturbance during construction, operation, maintenance and termination of the facilities authorized herein.

Encana Oil & Gas (USA) Inc. shall immediately notify the authorized officer in the event that any corners, monuments or markers are disturbed or are anticipated to be disturbed. If any monuments, corner or accessories are destroyed, obliterated or damaged during construction, operation or maintenance, Encana shall secure the services of a Registered Land Surveyor to restore the disturbed monuments, corner or accessories, at the same location, using surveying procedures found in the Manual of surveying Instructions for the Survey of the public Lands of the United States, latest edition. Encana shall ensure that the Registered Land Surveyor properly

records the survey in compliance with the Colorado Revised Statues 38-53-101 through 38-53-112 (1973) and shall send a copy to the authorized officer.

C. During drilling and subsequent operations, all equipment and vehicles will be confined to the access road right of way and any additional areas as specified in the approved Application for Permit to Drill.
D. Interim reclamation of disturbed areas no longer needed for drilling/completion operation will be accomplished by grading, leveling and seeding as recommended by the Bureau of Land Management.
E. Encana Oil & Gas (USA) Inc. will be responsible for road maintenance from the beginning to completion of operations.
F. The production facility may consist of 8-500 bbls water tanks, 8- 500 bbls condensate tanks, 1-5 separators, 1 combustor, 1 gas line and 2 meter houses. Pad Sales meters and buildings are approximately 6' x 6'.

5. LOCATION AND TYPE OF WATER SUPPLY

A. Water to be used for the drilling and completing of these wells may be delivered to the location by truck over the roads described in items #1 and #2. The water source may be from (1) recycled flow back water (frac water from completion operations), production water gathered from producing wells, or some combination thereof resulting from ongoing operations in the Piceance Basin that may be treated for reuse, or (2) fresh water from available water rights in the Piceance Basin.
B. The water provider is Encana. Fresh water will come from Encana owned area water rights, or recycled production water from Encana owned natural gas wells located throughout the Piceance Basin. Encana maintains numerous water rights in the Piceance Basin. Any fresh water used in operations may come from various approved points of diversion along the Colorado River (reference decrees #CA-8303 and #CA-4004, case # 2010 CW 175), likely the DeBeque area, an alternate point of diversion or private water source or may be purchased from 3rd party supplier. Any recycled production water used in operations will come from another operators' flowback/produced water or various Encana-owned natural gas wells in the Piceance Basin, hauled from Encana's Middle Fork Water Treatment Facility located North of Parachute, CO, approximately 24.9 miles to De Beque, CO.
C. The estimated amount of water used for construction, drilling and dust abatement is ~8000 bbls fresh water per well. Completions will use ~600,000 bbls per well of either produced or recycled water. The routes the trucks will take if it becomes necessary to truck water would be the route indicated in the driving directions from Parachute, CO. See Section 1- E.
D. *Encana will provide to BLM upon completion the actual total volume of water used for drilling and completion, for BLM Colorado's annual report.

6. SOURCE OF CONSTRUCTION MATERIALS

A. All access roads crossing Federal land are described under Item #2, and shown on *Topo Map "A"*.
B. All necessary materials for earthwork construction are on this location. We will not be borrowing materials from any other location.
C. Root balls shall be buried or placed off location or access road to be scattered back over the disturbed area as part of the final reclamation.

D. There will be no additional fill required.

7. METHODS OF HANDLING WASTE MATERIALS

A. Cuttings will be stabilized in a steel cuttings bin (~45' x 12' x 10') and stockpiled on site. Cuttings Management: cuttings deposited in the steel bin will be solidified with sawdust. Cuttings will be moved from the steel bin to the cuttings area, on the pad in the cutslope. The cuttings will be managed per the COGCC regulations. For reclamation we bury the cuttings on location in the cut slope and capped with a minimum 3' of native material then spread topsoil and seed with appropriate stormwater management BMP's.

B. The steel cuttings bin and flare ditch will be constructed on the existing location and will not be located in natural drainages where a flood hazard exists or surface runoff will destroy or damage the walls. All pits will be constructed so as not to leak, break, or allow the discharge of liquids there from. All pits will be constructed, operated and maintained in accordance with the applicable BLM/COGCC rules and regulations.

C. Drilling fluids are contained in a closed loop system. When drilling on a location is finished the fluids are dewatered and transferred by truck to another drilling location.

D. In the event that adverse weather conditions prevent removal of the fluids from the mud system within this time period, an extension may be granted by the Authorized Officer upon receipt of a written request from Encana Oil & Gas (USA) Inc.

E. Salts are not encountered while drilling and we do not use salt based mud.

F. Chemicals are stored on location in secondary containment and used as necessary to treat mud. The chemicals are contained, used in the mud or transferred to another location. They are not disposed of.

G. Produced fluids – liquid hydrocarbons produced during natural gas production operations will be confined to flow back tanks on location. Produced fluids may be recycled and reused in drilling/fracing operations on other area wells or locations. Excess water may be piped or trucked to permitted Encana-owned disposal wells or treatment facility and/or trucked to a licensed commercial disposal facility. Encana will take excess produced water to Encana's Middle Fork Water Treatment (UIC 120803), located in the SWSW of Sec. 30 T5S, R95W or EnCana's High Mesa Water Treatment Facility (UIC 149013) located in the SENW Sec. 36 T7S, R96W. Encana will use the LW Federal Disposal # 1 (045-06170) located in the SENE of Sec. 6 T8S R97W, the Orchard Federal #1 (077-08801) located in the SWNE Sec. 28 T8S, R96W, the Orchard Federal # 2 (077-09372 located in the NENW Sec. 17 T8S, R96W and the Orchard Federal #3 (077-08854) located in the SENW Sec. 21, T6S, R96W for Encana operated disposal wells. The commercial disposal facility is Danish Flats Environmental Service, Inc. Office Headquarters: 616 W. Monument St. Colorado Springs, CO 80905. (719) 598.9735. Disposal Site (Evaporation Facility) I-70 @ Exit 214 Cisco, UT.

H. Sewage- self-contained, chemical toilets will be provided for human waste disposal. Upon completion of operations, or as needed, the toilet holding tanks will be pumped and the contents thereof disposed of in an approved, sewage disposal facility..

I. Garbage and other waste material – garbage, trash and other waste materials will be collected in a portable, self-contained and fully enclosed trash cage during drilling and completion operations. Upon completion of operations (or as needed) the

accumulated trash will be disposed of at an authorized sanitary landfill. No trash will be burned on location.

J. Immediately after removal of the drilling rig, all debris and other waste materials not contained in the trash cage will be cleaned up and removed from the well location. No adverse materials will be left on the location.

K. All spills of oil, gas, other potentially hazardous substances will be reported in accordance with applicable rules and regulations, and will be remediated on site, as appropriate, or removed to an approved disposal site.

8. ANCILLARY FACILITIES

Self-contained travel-type trailers may be used on site during drilling operations. Certified Colorado Department of Housing units will be provided for use in the extraction of gas on COGCC approved pads. These units will be used by Essential Personnel and will abide by Federal, State, and local regulations which directly pertain to Temporary Employee Housing (TEH) or Temporary Living Quarters (TLQ), depending on the County in which extraction will be taking place.

For more information on how the stormwater features of the well pad and road are handled during Preconstruction/Construction/Interim/Final Reclamation please refer to Roan Creek Stormwater Management Plan COR-039310 (July 2007) and General Reclamation Surface Management Guideline (March 2011). This plan is on file at the operator's field office and is available for review upon request.

Encana has plans to use the proposed WhF D17 998 pad for fracing operations. *Attached is a proposed frac layout.* Encana may use a secondary location and associated temporary lines to store water and frac the wells. Encana will submit plans for an additional remote frac pad, if necessary, prior to completion operations.

Potable is water provided by water haulers certified by the Colorado Department of Public Health & Environment.
Septic will be held in County approved engineered ISDS Vault and Haul systems. Waste materials generated by and from these units will be contained in wildlife proof containers and will be hauled weekly, or as needed.

9. WELLSITE LAYOUT

A. *A pre-construction inspection will be conducted with the BLM before construction or other surface disturbance are commenced to coordinate development needs and resource protection. The meeting will include BLM and appropriate Encana staff. The BLM authorized officer will be contacted 48 hours prior to the commencement of construction activities.

B. The attached plat specifies the drill site layout as staked. Cross sections have been drafted to visualize the planned cuts and fills across the location. All suitable topsoil material will be stripped and stockpiled, (topsoil to be stripped from this location, including the areas of cut, fill and/or subsoil storage) and stockpiled for future reclamation of the well site. The windrowed and/or stockpiled topsoil will be seeded after construction is completed. There is no excess balance on this location.

C. Topsoil conservation practices include windrowing available topsoil. The topsoil and slash/brush will be pushed to the edge of disturbance and used for sediment control and kept in place to cold compost for final reclamation. Depth and width will vary

with availability and stormwater requirements. The estimated depth of the windrowed topsoil may vary between 6 inches to 5 feet.

D. Soil Unit Name: Barx loam, (soil map unit 3) with 3-12 % slope. Ecological site: Rolling Loam; Drainage class: well drained.

E. In general, materials will be moved and returned according to a last out first in philosophy. No excessive rock was identified at the on-site.

F. The flare ditch will be unlined.

G. This pad is likely to have a small amount of standing water. This pad is designed to contain stormwater. Engineered designs have been included in pad layout exhibits to accommodate major stormwater events and interim reclamation concerns.

H. Methods of stabilization: Local factors will be evaluated to determine what BMPs are suitable and practical at the time of construction. BMPs will be employed in different combinations during construction activities and phases as conditions warrant. The following BMPs may be used: erosion control blankets, hydro seeding, terracing, vegetated buffers, topsoil stockpiles, etc. The tracked linear windrows promote topsoil stabilization because of compaction and reduced slope percent. The windrows are also seeded and hydro-mulched with a hydraulic erosion control mulch.

I. To control drainage, Local factors will be evaluated to determine what BMPs are suitable and practical at the time of construction. BMPs will be employed in different combinations during construction activities and phases as conditions warrant. The following BMPs may be used: toe berm, level spreader, run-on protection, etc.

K. For sediment control, Local factors will be evaluated to determine what BMPs are suitable and practical at the time of construction. BMPs will be employed in different combinations during construction activities and phases as conditions warrant. The following BMPs may be used: stabilized construction entrance, sediment reservoirs, sediment traps, detention pond, slash, wattle, etc.

M. For more information on how the stormwater features of well pad and roads, topsoil and subsoil segregation are handled during Preconstruction/Construction/Interim/Final Reclamation please refer to the Roan Creek Area Stormwater Management Plan COR-039310 and General Reclamation Surface Management Guideline (March 2011). This plan is on file at the operator's field office and is available for review upon request.

10. PLANS FOR RECLAMATION OF THE SURFACE

A. PRODUCTION (Interim/Final Reclamation): The BLM will be contacted prior to commencement of any reclamation operations.

1. Immediately upon well completion, the well location and surrounding areas(s) will be cleared of all debris, materials, trash and junk not required for production.
2. Upon completion of the initial wells, Encana will evaluate the economics of the area. There is a possibility of three different scenarios:
   a) Assuming the area proves to be economic, Encana may return to drill the remaining 4 wells that are planned for this location. Interim reclamation will be applied within 6 months of the completion of the 6th well to all wells.

b) If the area is not economic enough to warrant drilling the remaining 4-5 wells within a reasonable timeframe (1 year) then interim reclamation will be applied to the first well within the one year.

c) If the wells are not economic at all the wells may be plugged-final reclamation standards will be applied to the pad.

The pad will be reclaimed except the working area which is usually 100' off wellheads and 10-15' around production equipment. The proposed reclaimed pad with all 8 wells surface is approximately 1.6 acres. *Please see Production Schematic in survey package.*

3. Waste and spoil materials will be disposed of immediately upon completion of drilling and work-over activities.
4. If the well is a producer, Encana will upgrade and maintain access roads as necessary to prevent soil erosion, and accommodate year round traffic. Areas unnecessary to operations will have areas reshaped. Topsoil will be redistributed and disked. All areas outside the work area will be re-seeded according to the Bureau of Land Management recommendations for seed mixture.
5. All cuttings areas and detention ponds will be closed as soon as possible.
6. A stormwater permit for the Roan Creek Area has been received from the Colorado Department of Public Health and Environment, Water Quality Control Division.
7. Methods of stabilization: Local factors will be evaluated to determine what BMPs are suitable and practical at the time of construction. BMPs will be employed in different combinations during construction activities and phases as conditions warrant. The following BMPs may be used: revegetation, rip rap, diversion ditch, etc.
8. Control drainage: Local factors will be evaluated to determine what BMPs are suitable and practical at the time of construction. BMPs will be employed in different combinations during construction activities and phases as conditions warrant. The following BMPs may be used: culverts, Run on protection berm, diversion ditch, etc.
9. Sediment control: Local factors will be evaluated to determine what BMPs are suitable and practical at the time of construction. BMPs will be employed in different combinations during construction activities and phases as conditions warrant. The following BMPs may be used: Run on Protection, detention pond, diversion ditch, etc.
10. During interim and final reclamation of the site, fill material will be pushed into cuts and up over the back slope. Allowance to construct sediment traps/reservoirs to maintain compliance with the state. Topsoil will be distributed evenly over the location and seeded according to the recommended seed mixture. The access road and location shall be ripped or disked prior to seeding. Perennial vegetation must be established. Additional work shall be required in case of seeding failures, etc.
11. For interim and final reclamation topsoil will be redistributed and disked. All areas outside the work area will be re-seeded according to the Bureau of Land Management recommendation for seed mixture. Upon completion of backfilling, leveling and recon touring, the stockpiled topsoil will be evenly spread over the reclaimed area(s). Segregation of topsoil material and

replacement of topsoil in its respective position (last out, first in) method will assist in the re-establishment of soil health and productivity. Topsoil will also be placed on its respective slopes, i.e. oakbrush shrub soil and pinyon juniper woodland soil will not be mixed. Prior to reseeding, all disturbed surfaces will be scarified and left with a rough surface. All disturbed surfaces will be re-seeded according to the BLM recommendation for seed mixture.

12. Slash/brush will be pushed to the terminal edge of disturbance along probable discharge edges as vegetation sediment control and during the life span of the site and kept in place to cold compost for final reclamation
13. There will be no additional fill required beyond the materials from the proposed location.
14. The fill from the proposed action will be separated mechanically and placed in 1 to 2 foot lifts using a dozer and blade.
15. At final reclamation all storm water management BMP's for drainage, sediment and erosion will be removed because the only remaining potential pollution source via stormwater will be runoff sediment. All sediment will be managed through revegetation practices (seeding on contour, crimping straw on contour and/or erosion control hydro-mulch, pocking and topsoil distribution. Perimeter wattles will remain until vegetation establishment meets minimum requirements.
16. In general, materials will be moved and returned according to a last out first in philosophy. No excessive rock was identified at the on-site.
17. The estimated short-term surface disturbance:

Approximate Acreage Disturbance	
Well Disturbance	5.760
New Access Road Disturbance	0.130
Pipeline Disturbance	0.098
Total =	5.988

After reclamation, **about 1.6 acres of long-term disturbance** will remain.

18. Weed Control: A Weed Control Plan is on file at the operator's field office and is available for review upon request.
19. *The Surface Management Agency will be notified 48 hours prior to seeding. All disturbed areas are to be seeded with a mixture approved by the BLM as a condition of approval in the approved APD.

Prevention and Detection of Noxious Weeds:

a) If noxious weeds are found, they shall be treated (if timing is appropriate) or removed (if plants have formed seeds) prior to ground-disturbing activities to limit weed seed production and dispersal. If the treatment timing is not appropriate for the weed species, ground-disturbing activities may proceed.

b) All disturbed surfaces shall be promptly revegetated with certified weed-free seed per agency policy. BLM policy is to use native species for revegetation. Exceptions may be granted under certain conditions, such as the use of non-invasive non-native forbs when native forbs are unavailable or unlikely to succeed due to adverse conditions. Also, non-native, non-persistent sterile

grasses may be used to provide ground cover for soil stabilization and weed suppression during temporary reclamation.

c) Topsoil stockpiles shall be promptly re-vegetated to maintain soil microbe health and prevent weeds. Native or non-native, non-persistent sterile grasses may be used to seed stockpiles.

d) Straw, hay, or other mulch used in reclamation shall be certified weed-free.

Inventory and Mapping of Noxious Weeds:

a) The center points of List A and B weed infestations (with the exception of redstem filaree and quackgrass) shall be marked with a GPS unit, or, GPS lines or polygons along or around weed infestations.

b) A Noxious Weed Inventory record shall be completed each time a List A or B weed infestation is inventoried (with the exception of redstem filaree and quackgrass).

c) Inventories for the presence of noxious weeds shall be conducted at least once early in the growing season for all areas disturbed by oil and gas exploration and development. Weeds shall be treated in an appropriate manner if found during inventories. Follow-up inventories and re-treatment during the same growing season may be necessary to provide additional control and/or eradication.

Weed Control:

a) The operator shall implement the best available weed control technique(s) at the appropriate times based on the life history of the weed species.

b) A Pesticide Use Proposal (PUP) shall be approved by the BLM prior to use of herbicides on BLM lands.

c) Only adjuvants and herbicides approved by the BLM shall be applied to BLM lands.

d) A Pesticide Application record shall be filled out each time pesticides are applied to BLM. The operator shall maintain these records for a minimum of three years.

e) All List A species and those List B species designated in Appendix A shall be immediately reported to the appropriate County, BLM, and FS Weed Manager.

e) Herbicide use shall follow application rates, restrictions and warnings listed on the label.

f) In situations where noxious weeds have escaped from the project area into adjacent sites, the infested areas shall be treated to prevent further expansion into un-infested areas and re-infestation of the treated area.

g) The operator shall use pesticide applicators licensed by the Colorado Department of Agriculture.

20. Spill Prevention Control and Countermeasure Plan (SPCC): The SPCC plan has been prepared for the project and is on file at the operator's field office and is available for review upon request. Encana is in substantial compliance with all 40 CFR part 112 rules.

B. For more information on how the stormwater features of well pads and roads, topsoil and subsoil segregation are handled during:
Preconstruction/Construction/Interim/Final Reclamation please refer to Roan Creek Area Stormwater Management Plan COR-039310 (July 2007). This plan is on file at the operator's field office and is available for review upon request.

Pipeline Reclamation:

When the pipeline installation phase of the project is completed, the right-of-way will be restored as close as possible to pre-excavated grades and compaction. Topsoil will be redistributed as close to original salvage depths as possible. In areas with pre-existing rocky surface material, the stored rock will be spread over the right-of-way to maintain a surface appearance to that of adjacent undisturbed terrain. Every effort will be made to install permanent erosion control measures after re-contouring is complete. Any brush that was shredded will be spread evenly across the right-of-way. Seeding will take place with an approved seed mix and application rate provided by others. After seeding is complete the temporary BMP's will be replaced with permanent BMP's and monitored for any malfunctions. BMP's will continue to be inspected and maintained and any areas that do not have re-growth will be reseeded as necessary until final stabilization is achieved.

Final reclamation of the pipeline will be decided at the time of final reclamation per landowner requirements and directives. If for some reason Encana decides to abandon the pipeline during final reclamation it would be cut and capped. The pipeline would be left in place to avoid causing surface disturbance.

C. DRY HOLE /ABANDONED LOCATIONS

On lands administered by the BLM, abandoned well sites, roads or other disturbed areas will be restored to near their original condition.

This procedure will include:

1. Re-establishing irrigation systems where applicable,
2. Re-establishing soil conditions in irrigated field in such a way as to ensure cultivation and harvesting of crops and,
3. Ensuring revegetation of the disturbed areas to the specification of the BLM at the time of abandonment.
4. Monitoring the site annually for List A and List B noxious weeds and utilizing weed control methods, as deemed necessary under an objective-based management approach, in accordance with an approved PUP.

All disturbed surfaces will be recontoured to the approximate natural contours and re-seeded according to BLM specifications. Reclamation of the well pad and access road will be performed as soon as practical after final abandonment and reseeding operations will be performed in the fall or spring following completion of reclamation operations.

If the well is abandoned or a dry hole, Encana will restore the access road and location to approximately the original contours. During reclamation of the site, fill material will be pushed into cuts and up over the back-slope. Allowance to construct sediment traps/reservoirs to maintain compliance with the state. In Dry-land Revegetation allowance to pock sites to create micro-catchments for water

containment for seed establishment. Topsoil will be distributed evenly over the location and seeded according to the recommended seed mixture. The access road and location shall be ripped or disked prior to seeding. Perennial vegetation must be established. Additional work shall be required in case of seeding failures, etc.

11. SURFACE OWNERSHIP:

Grand Junction BLM
2815 H Road
Grand Junction, CO 81506

12. OTHER INFORMATION:

A. A Class III (intensive) Cultural Resource Inventory of the proposed drill sites, access roads and other facilities on federal lands will be conducted and a report filed with the appropriate BLM office. Grand River Institute has filed Cultural inventory. Wildlife surveys have been conducted by WestWater Engineering.

B. If archaeological, historical or vertebrate fossil materials are discovered during the course of any construction activities, Encana will suspend all operations that further disturb such materials and immediately contact the appropriate BLM office. Operations in the area of discovery will not resume until written authorization to proceed has been issued by the BLM Authorized Officer (AO).

C. Encana will be fully responsible for the actions of their subcontractors. A copy of the approved APD and Conditions of Approval will be on location during drilling and completion operations.

D. Any construction activity in the areas shall be done with awareness that many natural gas pipelines are buried. Some are apparent as to location; some have grown over with weeds and brush. Encana proposes to contact the operators in the area and ROW holders to locate all lines before construction.

13. REPRESENTATIVES AND CERTIFICATION:

The Operator will be fully responsible for the actions of its subcontractors. A complete copy of the approved Application for Permit to Drill will be furnished to the field representatives to ensure compliance and shall be on location during all construction and drilling operations.

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions that currently exist; that I have full knowledge of the State and Federal Laws applicable to this operation; that the statements made in this APD Package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD Package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for filing false statements.

Dated 07/09/2012, Executed this 9th day of July, 2012.

Signed *Heather Mitchell,* Regulatory Analyst

PLAN CONFORMANCE REVIEW:
The Proposed Action is subject to and has been reviewed for conformance with (43 CFR 1610.5, BLM 1617.3) the following plan:

Name of Plan: GRAND JUNCTION Resource Management Plan

Date Approved: JANUARY, 1987

Decision Number/Page: Page 2-7, 2-39

Decision Language: The Grand Junction Resource Management Plan (RMP) and Record of Decision describe management decisions based on resource and geographic pieces of land called emphasis areas (USDI 1987; page 2-40). The RMP Oil and Gas Management objective is, "To make federal oil and gas resources available for lease, except where prohibited by law or where administrative action is justified in the national interest; to make public land available for economically and environmentally sound exploration and development projects; to avoid health and safety hazards; to protect important, sensitive resource values from unacceptable impacts; and to minimize the impacts to lessees from sensitive resource protection and hazard avoidance." The proposed well pad is located on public land within emphasis area Co-1, with an emphasis on Oil and Gas. The Grand Junction Resource Management Plan and Record of Decision further states that "Within each emphasis area, the management of a particular resource will be emphasized over all other resources. That is not to say that one resource will be excluded. They will be allowed so long as they are compatible with management of the emphasized resource. Future proposals will be evaluated in the context of the management philosophy of the emphasis area to determine whether the proposal is compatible."

In January 1997, the Colorado State Office of the BLM approved the Standards for Public Land Health and amended all RMPs in the State. Standards describe the conditions needed to sustain public land health and apply to all uses of public lands. The D17 998 pad will be in an area that has been evaluated for Land Health, but as it was recently burned in a wildland fire, future Land Health Status will be dependent on post-burn recovery.

REVIEW OF EXISTING NEPA DOCUMENTS:

The following NEPA document satisfies the requirement of being an activity or project-level EA that is applicable to the Proposed Action.

Name of Document:
Winter Flats Wells 10-43-99 and 11-43-100 - BLM-CO-130-2008-029-EA

Date Approved: July 3, 2008

Encana's proposed well pad and wells are within a developed gas field. The referenced EA and the EIS for the Grand Junction RMP include reasonably foreseeable energy development for the area that is sufficient to encompass the proposal. Encana's proposed wells would be required to be spudded by July 3, 2013, within five years of previous NEPA document BLM-CO-130-2008-029-EA.

CATEGORICAL EXCLUSION REVIEW: The proposed action is categorically excluded from further documentation in accordance with statutory NEPA categorical exclusions (CXs), as granted in Section 390 of the Energy Policy Act of 2005, for oil and gas exploration and development. The proposed action qualifies as a categorical exclusion under Section 390, based on the qualifying criterion **Number (3),** of the categories listed below (select only one).

Qualifying Criteria (check all that apply)	YES	NO
1. Individual surface disturbances of less than five (5) acres, so long as the total surface disturbance on the lease is not greater than 150 acres and site-specific analysis in a document prepared pursuant to NEPA has been previously completed.		X
a. The action will disturb less than 5 acres; if more than one action is proposed for a lease, each activity is counted separately and each may disturb up to five acres.		X
b. The current un-reclaimed surface disturbance readily visible on the entire leasehold is not greater than 150 acres, including the proposed action.	X	
c. This categorical exclusion includes the requirement of a site-specific NEPA document. A site specific NEPA analysis may be an EA/EIS for exploration and/or development, for a specific MDP, for a multi-well or a single well permit approval.		X
2. Drilling an oil and gas location or well pad at a site at which drilling has occurred within five (5) years prior to the date of spudding the well.		X
3. Drilling an oil or gas well within a developed field for which an approved land use plan or any environmental document prepared pursuant to NEPA analyzed a reasonably foreseeable activity, so long as such plan or document was approved within five (5) years prior to the date of spudding the well.	X	
a. The proposed APD is within a developed oil or gas field. A developed field is defined as any field in which a confirmation well has been completed.	X	
b. An existing NEPA document (including that supporting a land use plan) contains a reasonably foreseeable development scenario encompassing this action.	X	

Qualifying Criteria (check all that apply)	YES	NO
c. The NEPA document was finalized or supplemented within five years of spudding the new well.	X	
4. Placement of a pipeline in an approved right-of-way corridor, so long as the corridor was approved within five (5) years prior to the date of placement of the pipeline.		X
a. The placement of a pipeline in an existing corridor of any type. The term "right-of-way corridor" in Section 390 is not limited to those authorized under 43 CFR 2800, but is a generalized term applying to any type of corridor or right-or-way (whether on or off lease) approved under any authority or vehicle of the BLM, including Sundry Notices.		X
b. Placement of the pipeline within five years of placement approval (or amendment) of the most recent date of a decision (NEPA or permit authorization).		X
5. Maintenance of a minor activity, other than any construction or major renovation of a building or facility.		X

For Information Only:
CXs numbered one through four require prior approvals made following NEPA analysis. The field office must apply the same or better mitigating measures from the parent NEPA documents to all actions approved under any CX. Additionally, BMPs are to be applied as necessary to reduce impact to any authorization issued, to reduce environmental impacts.

CXs numbers two, three or four must state the date when the prior approval or NEPA was completed. Because the 5-year period determines the expiration of the approval for the pending well or pipeline, the APD/Sundry/ Grant must contain a COA/stipulation that if the action is not completed by the deadline, the CX will no longer apply, the approved application will expire and the operator will be required to submit a new application.

The decision maker must include in the well file a brief rationale as to why a statutory Energy Policy Act CX might be appropriate. If a CX is prepared, it will serve as such rationale. Should a proposed action qualify under more than one type of CX, each type that is applicable shall be explained, but the table documenting qualification of the CX under the Energy Policy Act shall be based on a single one of the five types. No other documentation or review for Extraordinary Circumstances is required. However, procedural requirements such as consultation under the Endangered Species Act and National Historic Preservation Act still apply.

INTERDISCIPLINARY REVIEW:

Name	Title	Area of Responsibility
Aline LaForge	Archaeologist	Cultural Resources, Native American Religious Concerns
Anna Lincoln	Ecologist	Special Status Species
John Toolen	Wildlife Biologist	Wildlife, Fisheries, Special Status Species

REMARKS:

CULTURAL RESOURCES

Compliance with NHPA: A records search of the general project area, and a Class III inventory of the Area of Potential Effect (APE), as defined in the National Historic Preservation Act (NHPA), was completed by Grand River Institute a Colorado BLM permitted cultural resource contracting firm (GJFO CRIR 1112-10) and draft information on the results was provided to the GJFO archaeologist on 8/8/2012. Conditions of the existing cultural environment are incorporated by this reference. The project inventory and evaluation is in compliance with the NHPA, the Colorado State Protocol Agreement, and other federal law, regulation, policy, and guidelines regarding cultural resources. The inventory did not identify any cultural resources in the APE. No further work is required.

SPECIAL STATUS SPECIES

Compliance with ESA: Plant and wildlife surveys in the area were conducted, and special status species were not found within 0.5 miles of the project area. Suitable habitat exists for some species, none of these species was observed. Some of this habitat (sagebrush, pinyon-juniper woodland) was lost to the Pine Ridge fire of June 2012. If project work is scheduled to begin during future raptor nesting periods, another raptor survey should be conducted prior to the start of work.

NAME OF PREPARER: Julia Christiansen

NAME OF ENVIRONMENTAL COORDINATOR: /s/ Collin Ewing (8/8/12)

DATE: August 9, 2012

DECISION:

I have reviewed this document and have decided to implement Encana's proposed action as described above. This project is categorically excluded from documentation in an EA or EIS under Section 390 of the Energy Policy Act of 2005.

RATIONALE:

This action is listed in BLM Instruction Memorandum Number 2005-247 as an action that may be categorically excluded under Section 390 of the Energy Policy Act of 2005. I have evaluated the action relative to the five qualifying criteria listed above and have determined that, as it does not represent an exception, it is therefore categorically excluded from further environmental analysis. The action meets the qualifying criteria for CX Number Three.

The APDs are within the *Bronco Flats* developed natural gas field and are also within the current Resource Management Plan Emphasis Area Co-1, for oil and gas. The EIS for the Grand Junction Resource Management Plan contains reasonably foreseeable development scenarios encompassing this action, as does the referenced environmental assessment for Winter Flats Wells 10-43-99 and 11-43-100, BLM-CO-130-2008-029-EA (July 3, 2012).

The proposed well pad is designed to accommodate multiple wells, therefore reducing surface disturbance while maximizing energy resource extraction. Existing roads and infrastructure have been incorporated into the proposal as much as possible, further minimizing new disturbance. This project will continue to support economically and environmentally sound exploration and development in a developed field, in a manner designed to protect sensitive natural resources and avoid known health and safety hazards.

Catherine Kelly 8/10/12

Date

Field Manager
Grand Junction Field Office

Administrative Review or Appeal Opportunities

This decision is effective upon the date the decision or approval by the authorized officer. Under regulations addressed in 43 CFR Subpart 3165, any party adversely affected has the right to appeal this decision. An informal review of the technical or procedural aspects of the decision may be requested of this office before initiating a formal review request. You have the right to request a State Director review of this decision. You must request a State Director review prior to filing an appeal to the Interior Board of Land Appeals (IBLA) (43CFR 3165.4).

If you elect to request a State Director Review, the request must be received by the BLM Colorado State Office, 2850 Youngfield Street, Lakewood, Colorado 80215, no later than 20 business days after the date the decision was received or considered to have been received. The request must include all supporting documentation unless a request is made for an extension of the filing of supporting documentation. For good cause, such extensions may be granted. You also have the right to appeal the decision issued by the State Director to the IBLA.

Contact Person

For additional information concerning this decision, contact Julia Christiansen, Natural Resource Specialist, Grand Junction Field Office, 2815 H Road, Grand Junction, CO 81504; Phone 970-244-3093; Email jchristi@blm.gov.

ATTACHMENTS:

Attachment A: Site Specific and Standard Conditions of Approval
Appendix 1: NEPA Notification and IDT Review

ATTACHMENT A

CONDITIONS OF APPROVAL

PAD D17 998 - NWNW Sec. 17 T9S, R98W, Mesa County, CO

Lease No COC-12645

Well Number	Bottom Hole Locations
WHF DV04B-17 D17 998	NWNW Sec 17 T9S, R98W

Lease No COC-12645A

Well Number	Bottom Hole Locations
WHF DHS7C-20 D17 998	SWSW Sec 20 T9S, R98W
WHF DHS3C-19 D17 998	SWSE Sec 19 T9S, R98W
WHF DHS3C-20 D17 998	SWSE Sec 20 T9S, R98W
WHF DHS5C-20 D17 998	SESW Sec 20 T9S, R98W
WHF DHS1C-19 D17 998	SESE Sec 19 T9S, R98W

The subject wells are located in an area that is controlled by an Emergency Closure Order due to the Pine Ridge Fire. This order closes the affected lands to all entry and will remain in effect until July, 12, 2013. In order to legally access these lands authorized permitees may submit a written request to the Grand Junction Filed Office Manager for consideration.

If any of the above-listed wells has not been spudded by July 3, 2013, the associated APD will no longer be valid and the operator shall cease all operations related to preparing to drill the well.

Approval of this application does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease that would entitle the applicant to conduct operations thereon.

The operator must provide a true and complete copy of a document in which the owner of the surface where the well is located, and any adjacent surface owners crossed for access to the well, or the respective representative guarantees the Department of the Interior (Department), including BLM, access to the non-Federal lands to perform all necessary surveys and inspection. If access for any bureau of the Department to the operations and surrounding area for official business related to the approved operations is denies or impeded in any way, the BLM my order the federally approved operations halted and the Federal well or wells shut in.

All lease and/or unit operations will be conducted in such a manner that full compliance is made with applicable laws, regulations (43 CFR 3100), Onshore Oil and Gas Orders, and the approved plan of operations. The operator is fully responsible for the actions of all subcontractors.

A copy of the approved application for permit to drill (APD), including the Conditions of Approval and accompanying Surface Use Plan of Operations will be furnished to the field representative by the operator to insure compliance and will be available to authorized personnel at the drill site whenever active construction, drilling or completion operations are underway.

DOWNHOLE CONDITIONS OF APPROVAL

1. Twenty-four hours prior to (a) spudding, (b) conducting BOPE tests, (c) cementing/running casing strings, and (d) within twenty-four hours after spudding, the GJFO Petroleum Engineer or Petroleum Engineer Technician shall be notified.
2. A GJFO petroleum engineer shall be contacted for a verbal approval prior to commencing remedial work, plugging operations on newly drilled boreholes, changes within the drilling plan, sidetracks, changes or variances to the BOPE, deviating from conditions of approval, and conducting other operations not specified within the APD. Please contact, Bob Hartman at 970-244 3041 (office) or 970-210-2374 (cell) for verbal approvals.
3. If a well control issue or failed test (e.g. kick, blowout, water flow, casing failure, or a bradenhead pressure increase) arises during drilling or completions operations, Bob Hartman at 970-244 3041 (office) or 970-210=2374 (cell) shall be notified within 24 hours from the time of the event. IADC/Driller's Logs and Pason Logs (mud logs) will be forwarded to the GJFO.
4. The BOPE shall be tested and conform to Onshore Order No. 2 for a **3M** system and recorded in the IADC/Driller's log. A casing head rated to 5,000 psi or greater shall be used.
5. Any electrical/mechanical mud monitoring equipment shall be function tested prior to drilling out the surface casing shoe. At a minimum, this equipment shall include a trip tank, pit volume totalizer, stroke counter, and flow sensor.
6. Prior to drilling out the surface casing shoe, gas detecting equipment shall be installed in the mud return system. The mud system shall be monitored for hydrocarbon gas/pore pressure changes, rate of penetration, and fluid loss.
7. A gas buster shall be functional and all flare lines effectively anchored in place prior to drilling out the surface casing shoe. Discharge of flare lines shall be a minimum of 100' from the well head and targeted at bends. The panic line shall be a separate line (not open inside the buffer tank) and effectively anchored. All lines shall be downwind of prevailing wind direction and directed into a flare pit, which cannot be the reserve pit. The flare system shall use an automatic ignition. Where noncombustible gas is likely or expected to be vented, the system shall be provided supplemental fuel for ignition and maintain a continuous flare.
8. After the surface/intermediate casing is cemented, a Pressure Integrity Test/Mud Equivalency Test/FIT will be performed on the first well drilled in accordance with OOGO No. 2; Sec. III, B.1. i. in order to make sure the surface/intermediate casing is set in a competent formation. This is not a Leak-off Test, but a formation competency test, insuring the formation at the shoe is tested to the highest anticipated mud weight equivalent necessary to control the formation pressure to the next casing shoe depth or TD. Submit the results from the test via email (bhartman@blm.gov) on the first well drilled on the pad or any horizontal well and record results in the IADC log. Report failed test to Bob Hartman at 970-244 3041 (office) or 970-210-2374 (cell). A failed pressure integrity test is more than 10% pressure bleed off in 15 minutes.

9. On the first well drilled on this pad, a triple combo open hole log shall be run from the base of the surface borehole to surface, and from TD to bottom of surface casing shoe. This log shall be in submitted within 48 hours in .las and .pdf format to the GJFO.
10. Submit the (a) mud/drilling log (e.g. Pason disc), (b) driller's event log/operations summary report, (c) production test volumes, (d) directional survey, and (e) Pressure Integrity Test results within 30 days of completed operations (i.e. landing tubing) per 43 CRF 3160-9 (a).
11. Prior to commencing fracturing operations, the production casing shall be tested to the maximum anticipated surface treating/fracture pressure and held for 15 minutes without a 2% leak-off. If leak-off is found, Bob Hartman shall be notified within 24 hours of the failed test, but prior to proceeding with fracturing operations. The test shall be charted and set to a time increment as to take up no less than a quarter of the chart per test. The chart shall be submitted with the well completion report.
12. During hydraulic frac operations, monitor the bradenhead/casing head pressures throughout the frac job. Any sharp rise in annular pressure (+/- 40 psi or greater) will terminate the frac operations in order to determine well/wellbore integrity. Notify BLM Bob Hartman at 970-244 3041 (office) or 970-210-2374 (cell) immediately.

Contact this office for a verbal approval prior to commencing remedial work, plugging operations on newly drilled boreholes, changes within the drilling plan, sidetracks, changes or variances to the BOPE, deviating from conditions of approval, and conducting other operations not specified within the APD.

In the event after-hours approval or notification is necessary, please contact one of the following:

Bob Hartman Petroleum Engineer	H: 970.257.1381	W: 970.244.3041 C: 970.210-2374
Ed Fancher Petroleum Engineering Tech.	H: 970.242.9502	W: 970.244.3039 C: 970.640.4590

BLM Fax: 970.244.3083

SITE-SPECIFIC SURFACE CONDITIONS OF APPROVAL

1. All permanent (onsite for six months or longer) above-ground equipment constructed or installed, including pumping units, will be painted BLM Standard Environmental Color Shale Green, in a non-reflective finish. All production facilities will be painted within six months of installation. Facilities that are required to comply with Occupation Health and Safety Act Rules and Regulations may be excluded from this painting requirement.
2. Encana will provide to BLM, upon completion, the actual total volume of new water used for drilling and completion of horizontal wells.
3. A pre-construction inspection will be conducted with the BLM before construction or other surface disturbance begins, to coordinate development needs and resource protection. The meeting will include BLM and appropriate Encana and construction staff. The BLM will be contacted at least 48 hours prior to the commencement of construction activities.

4. Seed tags or other official documentation of the seed mix shall be supplied to the BLM for approval at least 14 days before the date of proposed seeding.
5. BLM shall be notified 48 hours prior to seeding all disturbed areas with a mixture approved by the BLM as a condition of approval in the approved APD. Within 30 days after seeding a Sundry Notice describing the completed work, the weed-free certification, and the seed tag(s) will be submitted to the BLM.

STANDARD SURFACE USE CONDITIONS OF APPROVAL

The following standard surface use COAs are in addition to all stipulations attached to the Federal leases and to any site-specific COAs for individual well pads.

1. Administrative Notification. The operator shall notify the BLM representative at least 48 hours prior to initiation of construction or reclamation activities.
2. Other Permits. This authorization is contingent upon receipt of and compliance with all applicable federal, state, county, municipal and local permits, including all necessary environmental clearances and permits (Colorado Oil and Gas Conservation Commission, U.S. Army Corps of Engineers, U.S. Fish & Wildlife, U.S. Forest Service, Colorado Department of Transportation, Colorado Department of Health & Environment, County Health and Road Departments, municipalities, etc.).
3. Existing Uses. The operator shall obtain agreements allowing construction and maintenance with all existing right-of-way holders, authorized users, and pipeline operators prior to surface disturbance or construction of the location or access across or adjacent to any existing or approved rights-of-way or pipelines. In the case of privately owned surface, the operator shall certify to BLM that a Surface Use Agreement has been reached with the private surface owners prior to commencing construction and that the owner has been provided a copy of the Surface Use Plan of Operations (SUPO) required for permitting a federal APD. If an Agreement cannot be reached, the operator shall comply with provisions of the law or regulations governing the Federal right of re-entry to the surface (43 CFR 3814).
4. Fire. The operator shall implement measures to prevent fires on public and private land and will be held responsible for the costs of suppressing fires on public lands that result from the actions of its employees, contractors, or subcontractors. Range or forest fires caused or observed by the operator's employees, contractors, or subcontractors shall be immediately reported to the BLM. All fires or explosions that cause damage to property or equipment, loss of oil or gas, or injuries to personnel shall immediately be reported to the BLM Grand Junction Field Office at 970-244-3000. During conditions of extreme fire danger, surface-use operations may be restricted or suspended in specific areas, or additional measures may be required by the BLM.
5. Road Construction, Use and Maintenance. Roads shall be crowned or sloped, ditched, surfaced, drained with culverts and/or water dips, and constructed to BLM Gold Book standards. Culvert outlets shall incorporate controls such as rip-rap, sediment catchments, and anchored check structures to slow water velocity and prevent erosion and sediment transport.

If applicable, initial gravel application shall be to a minimum depth of 4 inches.

When saturated soil conditions exist on access roads or location, travel shall be halted until soil material dries out or is frozen sufficiently for use to proceed without undue damage and erosion to soils, roads and locations.

The operator shall provide timely maintenance and cleanup of roads. A regular schedule for maintenance shall include, but not be limited to dust abatement, reconstruction of the crown, slope, or water bars; blading or resurfacing; clean out of ditches, culverts, catchments and other BMPs. When rutting of the travelway becomes greater than 4 inches, maintenance such as blading, and/or gravelling shall be conducted as approved by the BLM.

Roads that access active construction and drilling sites shall be posted with warning signs to alert hunters and recreational vehicle users to project personnel and vehicles in the project area. Project personnel shall restrict activities and travel to permitted roads and sites.

6. Dust Abatement. The operator shall prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or wind events. The BLM may direct the operator to change the level and type of treatment if dust abatement is insufficient. BLM approval is required before application of surfactants, binding agents, or other dust-suppression chemicals on roadways within public lands. Speed control measures on all project-related unpaved roads shall also be required. More stringent dust control may be required in areas adjacent to Federal- or State-listed threatened, endangered, or sensitive plant species.

7. Pipelines. Buried pipelines shall have a minimum cover of 48 inches in a roadway and at road crossings, 36 inches through typical soil and rock, and 24 inches in areas requiring rock blasting. The permit holder is responsible for burying a pipeline to a depth that safely accommodates existing land and road uses and maintenance.

   Pipelines installed beneath stream crossings shall be buried to a minimum depth of 4 feet below the channel substrate to avoid exposure by channel scour and degradation. Following pipeline burial, the channel grade and substrate composition shall be returned to pre-construction conditions.

   All pipeline welds within 100 feet of a perennial stream shall be x-rayed to prevent leakage into the stream. Where pipelines cross streams that support Federal- or State-listed threatened or endangered species or BLM-listed sensitive species, the authorizing officer may require additional safeguards, including double-walled pipe, and remotely-actuated block or check valves on both sides of the stream.

   Pipeline warning signs permanently marked with the operator's and owner's names (emergency contact) and purpose (product) of the pipeline shall be installed within five days of construction completion and prior to use of the pipeline for transportation of product. Pipeline warning signs are required at all road crossings and along the alignment, visible from sign to sign.

8. Drainage Crossings and Culverts. Erosion and sediment transport into any perennial, intermittent, or ephemeral drainage is prohibited. BMPs shall be installed within 100 feet of all drainages and may include, but are not limited to construction of silt catchments or check

dams; culverts or drainage dips; placement of surface rock, straw bales, matting or wattles; and preservation or establishment and maintenance of an effective vegetation buffer. Construction activities at drainage crossings (e.g. burying pipelines, installing culverts) shall be timed to avoid high flow conditions. Construction activities that affect streamflow shall consist of either a piped stream diversion or the use of a coffer dam and pump to divert flow around the disturbed area.

Minimum culvert diameter in any installation for a drainage crossing or road drainage shall be 24 inches. Culverts or other crossings of perennial or intermittent streams shall be sized and designed to allow for passage of fish and other aquatic biota. This may include a bottomless culvert or other designs that will not impede movement. Culverts at drainage crossings shall be designed and installed to pass a 25-year or greater storm event. Due to the flashy nature of area drainages and anticipated culvert maintenance, the U.S. Army Corps of Engineers recommends designing drainage crossings for the 100-year event.

9. Jurisdictional Waters of the US, Wetlands and Riparian Zones The operator shall obtain appropriate permits from the U.S. Army Corps of Engineers prior to crossing or discharging fill material into waters of the U.S., in accordance with Section 404 of the Clean Water Act. Waters of the U.S. are defined in 33 CFR Section 328.3 and may include wetlands as well as perennial, intermittent, and ephemeral streams.

   When activity in a wetland is unavoidable, the operator may be required to prevent disturbance by use of wooden or other protective mats and shall restore all temporarily disturbed wetlands or riparian areas. The operator shall consult with the BLM to determine appropriate mitigation, including verification of native plant species to be used in restoration. Temporary and permanent impacts to jurisdictional waters of the U.S. may require additional mitigation, including compensatory offsite mitigation. Contact the U.S. Army Corps of Engineers, Colorado/Gunnison Basin Regulatory Office, at 970-243-1199 ext. 16 or susan.nall@usace.army.mil.

10. Pre-Construction and Limit of Disturbance. Before surface disturbance, stakes, snow fence or flagging shall be installed to mark boundaries of permitted areas of disturbance, including pre-construction BMPs and soils storage areas. As necessary, slope, grade, and other construction control stakes shall be placed to ensure construction in accordance with the Surface Use Plan. All boundary markers shall be maintained in place until final construction cleanup is completed. If disturbance boundary markers are disturbed, they shall be replaced before construction proceeds.

11. Migratory Birds. To comply with the Migratory Bird Treaty Act (MBTA) prohibition of "take" of migratory bird species, pits that may contain liquid - including but not limited to reserve pits, produced water pits, frac-water pits, cuttings trenches covered by water/fluid, and evaporation pits - shall prevent or minimize entry or use by migratory birds. Bird excluding method(s), such as netting, shall be in place within 24 hours following introduction of fluids into the pit. Note: The U.S. Fish and Wildlife Service (USFWS) has determined flagging to be ineffective. Oil slicks and oil sheens shall immediately be skimmed off the surface of any pit that is not netted. If fluid pits are necessary, promptly drain, close and reclaim them.

All production equipment with a chimney, vent, or stack shall be fitted with a device such as an excluder cone, to prevent birds from entering or perching on any part of the chimney. Flat screens inside stacks are insufficient protection.

All mortality or injury to birds shall be reported immediately to the BLM project lead and to the USFWS representative at 970-243-2778 and visit http://www.fws.gov/mountain-prairie/contaminants/oilpits.htm.

12. Birds of Conservation Concern. Pursuant to BLM Instruction Memorandum 2008-050, all surface-disturbing activities are prohibited from May 15 to July 15 to reduce impacts to Birds of Conservation Concern (BCC). Exception to this may be granted if vegetation removal is accomplished prior to May 15 **or** if nesting surveys conducted no more than one week prior to surface-disturbing activities indicate that no BCC species are nesting or otherwise present within 10 meters of the area to be disturbed. Surveys will be conducted in coordination with the GJFO biologist and in accordance with current survey standards (contact Heidi Plank Wildlife Biologist 244-3012)

13. Range Management. Damage to range improvements (fences, gates, reservoirs, pipelines, etc.) shall be avoided. If range improvements are damaged during exploration and development, the operator shall repair or replace the damaged range improvements. If a new or improved access road bisects an existing livestock fence, a steel frame gate or a cattleguard with bypass gate shall be installed across the roadway to control grazing livestock.

14. Paleontological Resources. The operator shall inform all persons associated with operations under this authorization that any objects or sites of paleontological or scientific value, such as vertebrate or scientifically important invertebrate fossils, shall not be damaged, destroyed, removed, moved, or disturbed. If in connection with authorized operations any of the above resources are encountered, all activities that might further disturb such materials shall be suspended. The BLM shall be notified of the findings and the discovery shall be protected until the BLM authorized officer gives notice to proceed. If ground-disturbing activities cannot be immediately suspended, the operator shall work around or set the discovery aside in a safe place to be accessed by the BLM-permitted paleontologist.

17. Cultural Education/Discovery. The operator shall inform all persons associated with operations under this authorization that anyone who disturbs historic, archaeological or scientific resources, including artifacts, will be subject to prosecution.

    Pursuant to regulations (43 CFR 10.4(g), 16 USC 470h-3, 36 CFR 800.112), the BLM authorized officer shall be notified by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, historic/ prehistoric ruins or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4 (c) and (d), activities shall stop in the vicinity of the discovery, and the discovery shall be protected for 30 days or until the operator is notified by the BLM authorized officer to proceed. Approval to proceed will be based upon evaluation of the resource. As far as practical, evaluation shall be by a BLM staff archaeologist or by a BLM-approved professional and the operator shall bear the cost of non-federal professional services.

    Within five working days, the BLM authorized officer will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places
- what mitigation measures the holder will likely have to undertake before the site can be used (assuming that *in-situ* preservation is not necessary)
- the timeframe for the BLM authorized officer to complete an expedited review under 36 CFR 800.11, or any agreements in lieu thereof, to confirm through the SHPO State Historic Preservation Officer that the findings of the BLM authorized officer are correct and that mitigation is appropriate

The operator may relocate activities to avoid the expense of mitigation and delays associated with this process, as long as the new area has been appropriately inventoried and determined to have no cultural resources present and the exposed materials are recorded and stabilized. Otherwise, the operator shall be responsible for mitigation costs. The BLM authorized officer will provide technical and procedural guidelines for relocation and/or to conduct mitigation. Upon verification from the BLM authorized officer that the required mitigation has been completed, the operator will be allowed to resume construction.

Antiquities, historic ruins, prehistoric ruins, and other cultural or paleontological objects of scientific interest that are outside the authorization boundaries but potentially affected, either directly or indirectly, by the proposed action shall also be included in this evaluation or mitigation. Impacts that occur to such resources as a result of the authorized activities shall be mitigated at the operator's cost, including the cost of consultation with Native American groups.

Any person who, without a permit, injures, destroys, excavates, appropriates or removes any historic or prehistoric ruin, artifact, object of antiquity, Native American remains, Native American cultural item, or archaeological resources on public lands is subject to arrest and penalty of law (16 USC 433, 16 USC 470, 18 USC 641, 18 USC 1170, and 18 USC 1361).

18. Vegetation Removal. Before construction or drilling activities, the location and access road shall be cleared of brush and trees. Purchase a wood-cutting permit from BLM before clearing.

Chip in place all woody material, then salvage and store with topsoil.

All trees directly outside the staked perimeter of construction shall remain undamaged and left standing unless removal is specifically directed by the BLM.

19. Construction, Topsoil Stripping, Storage, and Replacement. When saturated soil conditions exist on access roads or location, travel and construction shall be halted until soil material dries out or is frozen sufficiently for travel or construction to proceed without undue damage and erosion to soils, roads and locations.

No topsoil shall be stripped when soils are saturated or frozen.

At the time of construction, topsoil shall be stripped following vegetation removal. Topsoil shall include all suitable growth medium present at a site, as indicated by color or texture. Topsoil depth may vary across a site. Stripped topsoil and vegetation smaller than 4 inches in

diameter shall be stored separately from subsoil or other excavated material and replaced prior to final seedbed prep.

To facilitate replacement, extend biological viability and create a berm to control stormwater, topsoil shall be windrowed around pad perimeter, per BLM Topsoil BMPs (BLM 2009 PowerPoint presentation available upon request), as practical. Along pipelines and roads, topsoil shall be wind-rowed, segregated and stored for later redistribution across disturbed corridors during reclamation.

Topsoil berms shall be seeded within 30 days to maintain soil microbe health, reduce erosion, and prevent weed establishment. (see Deadlines for Temporary Seeding, below)

20. Drilling, Testing, and Completion. Substances specifically listed as hazardous waste or demonstrating such character (40 CFR 261) shall not be used in drilling, testing, or completion operations, nor introduced at any time into the reserve or cuttings pit.

Fluids shall be confined to pits or tanks during air drilling, flaring or fracturing operations. Any flare or blooey line shall be directed into a pit and against a bank to prevent materials from leaving the pit. During air drilling, the blooey line shall be misted.

All pits that may contain liquid material shall be lined to prevent seepage into the ground. The pit liner shall be maintained in good working condition, with no tears or holes, until the pit is closed.

Pits shall be constructed to preclude the accumulation of precipitation runoff and maintain a minimum of 2 feet of freeboard between the maximum fluid level and the lowest point of containment. If pit fluids threaten to rise to a level allowing less than 2 feet of freeboard, immediately take steps to prevent introduction of additional fluids until sufficient pit capacity has been restored through fluid removal or an alternative containment method is approved and installed.

Reserve or cuttings pit shall be fenced on three sides prior to drilling activity and closed off on the fourth side after drilling is completed. Fencing shall be adequate to preclude entry by livestock, unless otherwise specified by BLM.

In deer and elk habitat, fences for livestock exclusion shall not exceed 40 inches. The four-strand fence shall have smooth top and bottom wires. Distance from the ground to the bottom smooth wire shall be no less than 16 inches. Distance from the top wire to the second wire shall be no less than 12 inches. Middle wires shall be barbed, with 6 inch spacing.

In areas where the BLM wildlife biologist determines that pits threaten harm to big game and other wildlife, fencing for pits and other facilities shall be 8-foot woven wire with adequate bracing. The bottom two feet of mesh shall be sized adequately to preclude entry of small animals. All fence construction shall be on cut or undisturbed ground and fences shall be maintained in livestock-tight condition (BLM Manual Handbook H-1741-1, p. 16).

If any reserve, evaporation, or holding pit is constructed with a slope steeper than 3:1, or if the pit is lined, escape ramps shall be installed every 50 feet along the pit slope and at each corner to allow for escape of livestock and wildlife. An example: anchored sections of galvanized

chain-link fence at least 24 inches wide which extend from the bottom of the pit to the top of the pit slope and across the top edge of the pit liner.

Pits shall be dry prior to soil testing and backfilling and closed per COGCC standards. Before backfilling, impervious pit liner shall be removed and disposed of properly. Liquids and solids collected on/in the liners will not be allowed to come into contact with the pad surface, parent soil or any other earthen layers during the cleanup of the site. Liners will be properly cleaned prior to removal or removed in such a manner so as not to allow liquids/solids to escape. Liners may be washed off into lined ditches, lined sumps or into the lined cellar and then pumped to the lined sumps prior to being removed. At the time of backfilling, all muds and associated solids shall be confined to the pit, with none squeezed out or incorporated into surface materials. A minimum of 4 feet of cover (overburden) is required above any muds or solids. When work is complete, the pit area must support the weight of heavy equipment without subsidence.

21. Production. Production facilities shall be located and arranged to facilitate safety and minimize long-term surface disturbance, typically clustered at the access end of the pad with tanks in cut. Access to facilities should be provided by a teardrop-shaped road through the production area, so that the driving area may be clearly defined and limited so that teardrop center may be revegetated.

    All installed production facilities (storage tanks, load outs, separators, treating units, etc.) with the potential to leak or spill oil, condensate, produced water, glycol, or other fluid which may be a hazard to public health or safety shall be placed within an appropriate secondary containment structure. The structure shall hold 110% of the capacity of the largest single container within it and be impervious to any oil, glycol, produced water, or other fluid for 72 hours.
    Chemical containers shall be clearly labeled, maintained in good condition and placed within secondary containment. They shall not be stored on bare ground, nor exposed to sun and moisture.

    To blend with the natural environment, all permanent above-ground facilities placed on the location shall be painted in a non-reflective finish to blend with the environment.

22. Interim Reclamation. The objectives of interim reclamation (IR) are to restore sufficient landform to maintain healthy, biologically active topsoil, including vegetative cover; control erosion and sediment transport; and minimize losses of habitat, visual resources, and forage throughout the project life.

    IR performance standards will be considered met when disturbed areas not needed for long-term production operations or vehicle travel have been recontoured and stabilized; revegetated with a self-sustaining, vigorous, diverse, native (or otherwise approved) plant community that shall minimize visual impacts, provide forage and stabilize soils. Seeded species will be considered firmly established when at least 50 percent of the new plants are producing seed.

    IR shall reduce well pads and roads to the minimum size needed for production and reshape disturbed lands to approximately natural contours within 6 months after completion of the last well planned for the pad or after a year has passed with no new wells drilled. Deadline is

subject to extension on a case-by-case basis upon approval of the BLM, based on season, timing limitations, or other constraints. Submit application for extension in writing to the BLM. If an extension is granted, temporary surface stabilization (hydro-mulch, erosion matting, etc.) may be required.

Prior to interim reclamation, the operator shall meet with BLM to inspect the disturbed area, review the existing reclamation plan, and agree upon any revisions to the plan.

Notify the Grand Junction Field Office Manager at least 48 hours prior to commencing any reclamation work and by Sundry Notice within 48 hours of completion of reclamation work. Seed tags or other official documentation of the seed mix shall be supplied to the BLM for approval at least 14 days **before** the date of proposed seeding.

Specific measures to follow during temporary seeding and interim reclamation.

a. Deadlines for Temporary Seeding and Interim Reclamation. Within 30 days of construction, topsoil storage piles, stormwater control features, temporarily disturbed areas along roads and pipelines, and cut/fill slopes shall undergo temporary seeding to stabilize them, maintain biotic soil activities, and minimize weed infestations. Seedbed preparation is not generally required for topsoil storage berms or other areas of temporary seeding. Temporary seeding may allow use of an approved seed mix containing one or more sterile hybrid grasses or other non-native cover crop in addition to native perennial species.

   BLM may specify seed mixes or deadlines for planting in order to optimize reclamation success in terms of moisture and temperature regimes. Deadlines are subject to extension on a case-by-case basis, following application in writing to the BLM.

b. Recontouring. Areas unnecessary to operation shall be reshaped to blend with natural topography to the extent possible following removal of all trash and equipment not needed for production operations. Fill slopes shall be restored to cuts and blended or contoured into large 'natural' berms that provide visual and stormwater benefits. In areas needing seedbed roughening or to alleviate compaction, rip surface in two passes at perpendicular directions to a minimum depth of 18-24 inches at a furrow spacing of no more than 2 feet.

c. Seedbed Preparation. Distribute salvaged topsoil evenly over the location. All disturbed areas outside the work area shall be prepared and seeded as part of interim reclamation.

   Final seedbed preparation shall consist of scarifying (pitting, raking or harrowing) the spread topsoil prior to seeding. Other than depressions created to support reclamation success, such as pitting/pocking, no depressions may be left where water could pond. If more than one season has elapsed between final seedbed preparation and seeding, and if the area is to be broadcast-seeded or hydroseeded, this step shall be repeated no more than 1 day prior to seeding to break up any soil crust that has formed.

   To create a more natural looking landscape in areas of visual sensitivity, or to control erosion and enhance vegetative establishment on slopes steeper than 3:1, seedbed prep shall include pocking or pitting the soil material to form microbasins scaled to the site and materials. These microbasins shall be constructed in irregularly spaced and irregularly aligned rows with an orientation perpendicular to the natural flow of runoff down a slope.

d. Soil Amendments. Requests for use of soil amendments, including fertilizer and soil conditioners, shall be submitted to the BLM for approval. The submittal shall include basic information on the amendment and the purpose of its use.

e. Seed Mixes. A seed mix approved by BLM in advance of planting shall be used on all BLM lands affected by the project. Percentage composition of each species in the mix shall be calculated based on the number of Pure Live Seed (PLS) per pound rather than percentage by weight. Seeding rate (pounds PLS per acre) shall be based on the total number of PLS seeds per square foot approved by BLM in the project reclamation plan or other reclamation guidance to the operator. On private lands, BLM-approved seed mixes are recommended, but the landowner has ultimate authority over reclamation.

Seed shall contain no noxious, prohibited, or restricted weed seeds and shall contain no more than 0.5 percent by weight of other weed seeds. Seed may contain up to 2.0 percent of "other crop" seed by weight, including the seed of other agronomic crops and native plants; however, a lower percentage of other crop seed is recommended. To maintain quality, purity, germination, and yield, only tested, certified seed for the current year, with a minimum germination rate of 80% and a minimum purity of 90% shall be used unless otherwise approved by BLM in advance of purchase. Seed shall be viability-tested in accordance with State law(s) and within 9 months before purchase.

Seed that does not meet the above criteria shall not be applied to public lands. Seed tags or other official documentation of the seed mix shall be supplied to the BLM for approval at least 14 days **before** the date of proposed seeding. Submit to the BLM within 30 days after seeding a Sundry Notice describing the completed work, the weed-free certification, and the seed tag(s).

e. Seeding Procedures. Seeding shall be conducted no more than 24 hours following completion of final seedbed preparation.

Where practical, seed shall be installed by drill-seeding to a depth of 0.25 to 0.5 inch along the contour of the site. Follow drill seeding with culti-paction to enhance seed-to-soil contact and prevent losses of both. Where drill-seeding is impracticable, seed may be installed by broadcast-seeding at twice the drill-seeding rate, followed by raking or harrowing to provide 0.25 to 0.5 inch of soil cover. Hydro-seeding and hydro-mulching may be used in temporary seeding or in areas where drill-seeding or broadcast-seeding/raking are impractical. Hydro-seeding and hydro-mulching must be conducted in two separate applications to ensure adequate seed-to-soil contact.

If interim revegetation is unsuccessful, the operator shall implement subsequent reseedings annually until satisfactory germination has been achieved. Requirements for reseeding of unsuccessful temporary seeding will be considered on a case-by-case basis. Seeding will be considered successful when the site is protected from erosion and revegetated with a vigorous, self-sustaining, and diverse cover of native (or otherwise approved) plant species and when at least 50 percent of the new plants are producing seed.

f. Mulch. Mulch shall be applied within 24 hours following completion of seeding. In areas of interim reclamation that used drill-seeding or broadcast-seeding/raking, mulch shall

consist of crimping certified weed-free straw or certified weed-free native grass hay into the soil.

g. Erosion Control. Cut-and-fill slopes shall be protected against erosion and sediment transport with the use of contouring, swales, water bars, lateral furrows, pocking/pitting of the soil surface, revegetation or other measures approved by the BLM. Biodegradable matting, bales, or wattles of weed-free straw or weed-free native grass hay may be installed on cut-and-fill slopes and along drainages to protect against soil erosion. Additional BMPs shall be employed as necessary.

h. Site Protection. The reclaimed pad shall be fenced to BLM standards to exclude livestock for the first two growing seasons or until seeded species are firmly established, whichever comes later. In deer and elk habitat, fences for livestock exclusion shall not exceed 40 inches. The four-strand fence shall have smooth top and bottom wires. Distance from the ground to the bottom smooth wire shall be no less than 16 inches. Distance from the top wire to the second wire shall be no less than 12 inches. Middle wires shall be barbed, with 6 inch spacing.

i. Monitoring. The operator shall conduct annual monitoring surveys of all sites and shall submit an annual monitoring report of these sites to the authorized officer by **December 1** of each year. Vegetative cover shall be monitored for reclamation success and for invasive species. Annual reports regarding weed management and reclamation success shall be submitted to the Grand Junction Field Office in compliance with the BLM/Forest Service *Noxious and Invasive Weed Management Plan for Oil and Gas Operators*. The annual report shall document whether attainment of reclamation objectives appears likely. If achievement of any objectives appears unlikely, the report shall include planned corrective actions. Upon review and approval of the report by the BLM, the operator shall be responsible for implementing the corrective actions or other measures specified by the authorized officer.

23. Weed Control. The operator shall regularly monitor and promptly control noxious weeds or other undesirable plant species as set forth in the joint BLM/ Forest Service *Noxious and Invasive Weed Management Plan for Oil and Gas Operators*, dated March 2007. A Pesticide Use Proposal (PUP) must be approved by the BLM prior to the use of herbicides. Annual weed monitoring reports shall be submitted to the authorized officer by **December 1**.

24. Visual Resources. Pads, roads, pipelines and production facilities shall be located and placed to avoid or minimize visibility from travel corridors, residential areas, and other sensitive observation points—unless directed otherwise by the authorized officer due to other resource concerns—and shall be placed to maximize reshaping of cut-and-fill slopes and interim reclamation of the pad.

To the extent practical, existing vegetation shall be preserved when clearing and grading for pads, roads, and pipelines. The authorized officer may direct that cleared trees and rocks be salvaged and redistributed over reshaped cut-and-fill slopes or along linear features.

To mitigate straight-line visual contrast effects of cut/ fill slopes, pad margins or cleared vegetation, adaptive management techniques may be required by BLM staff before or after construction. This could include additional tree removal along contrasting edges, to create

irregularly shaped openings or more natural-looking mosaic patterns, or treating surfaces to mitigate visual contrasts in color or surface texture.

Above-ground facilities shall be painted a non-reflective natural color selected to minimize contrast with adjacent vegetation or rock outcrops. The color may be specified by the BLM on a project-by-project basis.

25. Final Reclamation. A well pad that no longer has a producing well shall undergo final reclamation within 1 year following plugging and abandonment of the final well on that pad. Prior to recontouring and reseeding the pad, the operator shall complete the following:

- All equipment, facilities, and trash shall be removed from the location.
- Each borehole shall be plugged, capped, and its related surface equipment removed.
- Subsurface pipelines shall be purged and plugged at specific intervals.
- Dry hole markers shall be subsurface to prevent their use as perching sites by raptors.

Prior to final reclamation of a well pad, the operator shall meet with BLM to inspect the disturbed area, review the existing reclamation plan, and agree to any changes to the plan.

The BLM shall be notified at least 48 hours prior to commencing any reclamation work and within 48 hours of completion of reclamation work.

Recontouring for final reclamation shall consist of returning the pad, material storage piles, cut-and-fill slopes, and stormwater control features to natural contours that blend with adjacent undisturbed areas, as specified in the final reclamation plan or final reclamation plat approved by BLM. Requirements for seedbed preparation, soil amendments, seed mixes (including seed tags and weed-free seed), seeding procedures, mulching, erosion control, site security, and monitoring shall be as specified for temporary seeding and interim reclamation.

FY2012 NEPA PROJECT NOTIFICATION &
SURVEY REQUIREMENT DETERMINATION

PROJECT LEAD: Julia Christiansen
APPLICANT: Encana Oil and Gas USA Inc
PROJECT NAME: Whitaker Flats – 3 new well pads
DOCUMENT PREPARER: Julia Christiansen
STATUTORY TIME FRAME FOR THIS CATEGORY OF ACTION? YES

PURPOSE and NEED: The purpose of the proposed action is to allow the opportunity for Encana, holder of the affected federal oil and gas leases, to explore and develop them. BLM's need to respond to the proposal is expressed in regulations and policy. The Mineral Leasing Act of 1920 (MLA) authorizes and directs leasing of public lands for development of natural gas and other minerals (Sec. 13. 30 U.S.C. § 181 et seq.) The Federal Land and Policy Management Act of 1976 (FLPMA) mandates that BLM develop multiple sustainable uses of public lands in concert with land use planning and environmental protection (Sec. 302. 43 U.S.C. 1732).

GENERAL LOCATION: About 9 miles SW of DeBeque
T9S R98W, Sec 17, SWNW
T9S R98W, Sec 4, SESE
T9S R99W, Sec 36 NENE

Pad A36: NENE Sec 36, 9S 99W, Mesa County, USGS Quad *Circle Dot Gulch*
Pad K18: NESW Sec 18, 9S 98W, Mesa County, USGS Quad *Wagon Track Ridge*
Pad D17: NWNW Sec 17, 9S 98W, Mesa County, USGS Quad *Wagon Track Ridge*
~~**Pad E17:** SWNW Sec 17, 9S 98W, Mesa County, USGS Quad *Wagon Track Ridge*~~ **(see D17)**

General access via I-70 to DeBeque, westerly through town, turn west on MCR V.2 Rd aka Winter Flats road

Leases issued before the 1987 RMP, so they do not have lease stips. Fortunately, none would have applied, looking at the GIS stip layers. The A36 shows as being in Steep Slopes stip, but in fact is on flat ground above the slopes of concern (Pine Ridge), which lie just to the west.

Project and Map Documents:
T:\GIS\giswork\gjfo\projects\minerals\!OPERATOR_SUBMITTED_SPATIAL_DATA
T:\GIS\giswork\gjfo\projects\minerals\!!OPERATORS\Encana\3 Pads WestDeBeq 5-30-12
S:\Programs\Minerals\Oil & Gas\OPERATORS\EnCana\APDsNOS\3 Pads West of DeBeq 2012

PROPOSED ACTION **TYPE:** ☒**CX (390)**
Encana proposes to construct and drill 3 well pads west of DeBeque. Each pad is planned to allow for multiple wells, but only one exploratory will be drilled to start. Mostly existing roads and infrastructure.

DETAILED ONSITE NOTES INCLUDED AT BOTTOM OF DOCUMENT
POTENTIAL ISSUES and PROJECT LEAD COMMENTS

Near LBC WSA

Parts of access run thru Pine Ridge Burn (July 2012)

X COAL
- 1987 RMP shows entire project area as emphasis area for "Minerals-Coal."
- For pad D17 998, possible coal stip/COA needed, per 1981 well file at existing location (Maralex well 1-18 JC, Lease COC-12645A) Copies of old NEPA (CX) at my desk or in well file. Document title: *G-37-82*. "Adequate and sufficient electric/radioactive logs will be run to locate and identify anticipated coal beds. Please provide two copies of drilling logs and two copies of electric logs…" Also casing and cementing to protect coal beds down to 3000'

X HYDROLOGY
- For pad K18, BLM noted in 1982 that if existing Maralex well 1-18 JC was ever plugged and abandoned, BLM wanted it for a fresh water well.
- For pad D17, similar notes in 1980 Maralex well file for well 1-17, lease 12645, water well requested if OG well plugged.
- For pad K18, see onsite notes below regarding effects to ephemeral drainages.

X Visual Resources For pad D17, original location would have impacted viewers on MCR V.2 Road, but new location would minimize effects.

X Range/Wildlife Habitat
- The D17 and A36 locations are located in polygons proposed in DOI-BLM-CO-130-2012-042-EA for the Wagon Park Vegetation Treatment. The polygons for this treatment are in the GIS map project. The July 2012 Pine Ridge burn will probably preclude this veg project.
- A range study site (Winter Flats/Deer Park frequency point) is located about 300 feet west of the proposed D17 pad and would not be disturbed. We could add a COA to avoid it if you find necessary.
- Land Health - The D17 and K18 pads would be in Rolling Loam, not meeting LHS. The A36 is in Deep Loam and "meeting, with problems"

__Cultural __T&E Species __Sage Grouse __Recreation **_X_ Fire Rehab** (see A36 onsite notes) ~~Wilderness/WSA/LWC/ __NCA __ACEC~~

SURVEYS/CONSULTATION REQUIRED (Internal Scoping)

_X_ T&E Plants

Ecologist Comments/Requirements:

Need plant surveys on all new disturbance areas, specifically looking for federally threatened Colorado hookless cactus (*Sclerocactus glaucus*) and DeBeque phacelia (*Phacelia submutica*); BLM Sensitive Naturita milkvetch (*Astragalus naturitensis*), and two species of interest, Adobe thistle (*Cirsium perplexans*) and Eastwood's biscuitroot (*Lomatium eastwoodiae*). All are known in the vicinity. Initials/Date JT 6/7/12

_X_ T&E Animals/Critical habitat

Wildlife Biologist Comments/Requirements:

Raptor survey required; historic golden eagle nest within ½ mi of A-36. All wells in mule deer winter range, but no winter concentration or severe winter ranges areas. Sage sparrows known in Winter Flats area to west. Initials/date: JT 6/7/12

_X_ Cultural

Archaeologist Comments/Requirements:

A Class III survey for the **A36** well pad location was completed by the BLM archaeologist during

the April 11 onsite (CRIR 1012-08) and the access has previous survey (CRIR 1106-01 and1481-02). No further survey is required for that well pad or access. Any widening or other facilities associated with the access may require monitoring of site 5ME15309.
The need for additional Class III inventory for the well pads **K18 and D17** were discussed during the onsite. The existing access road coming to the K18 from the west and south (S Road) does not have a previous survey but has not been identified for upgrade or installation of pipeline and would not require additional survey at this time. If widening or installation of a pipeline with new surface disturbance is proposed, then additional Class III would be required. Surveys have been completed by Grand River Institute for both the K-18 and D-17 well pads (draft report pending CRIR 1112-10). The access to the K18 from the north (36 2/10 Road) does not have previous survey but the BLM has received a fieldwork authorization request for another EnCana proposal that would include the survey of this road for a pipeline (fieldwork pending CRIR 16912-01). The access to the D-17 has previous surveys. Stipulations for the COA will depend on the results of the surveys. For future reference by CR staff, the file search for this project is located in a GIS project located in
T:\CO\GIS\gisdata\field_offices\gjfo\cultural\restricted\ProjectWork\FY12\FileSearches\EnCana-WestOf DeBeque\EnCanaD17-998-K18-998.mxd Initials/Date: AIL 6/20/12

_X_ Other (Paleo/watershed/LWC/Water/Soils/Air etc.)
Specialist Comments/Requirements:

Water Resources:
Surface disturbance from the proposed well pads will not directly impact any surface water drainages. However, stormwater runoff from disturbed areas could impact the area hydrology and water quality during periods of runoff. To mitigate impacts associated with stormwater runoff, the operator must obtain a stormwater discharge permit from the State and successfully implement stormwater BMPs as approved through the State's permitting process. (COA if not proposed by operator)

Likewise, diversion and consumption of fresh water from local sources such as Roan Creek could also contribute to degradation of natural stream hydrologic processes. Diversion of floodwaters typically available to recharge near stream alluvial deposits could reduce water availability during base flow conditions, stressing riparian communities essential for maintaining stream bank stability. The operator should disclose the source (including diversion points) and anticipated volume of water to be used for drilling and completing the proposed wells. (COA if not provided by operator.)

Groundwater in the area of the proposed action is typically located adjacent to stream channels in alluvial or colluvial deposits and is primarily recharged through infiltration of rainfall/snowmelt runoff. Standard well construction and design practices would isolate fresh water zones during drilling and completion, providing sufficient protection to groundwater resources. Water tables in/near stream alluvial aquifers could be lowered with use of fresh water as described above.

Soils: All surface disturbances should adhere to surface operating standards and guidelines for Oil and Gas exploration and development. Implementation of BMPs outlined in the operator's State-approved Stormwater Management plan should sufficiently protect soil resources.

Air: Surface disturbance should be limited to periods when wind speeds do not exceed 35 mph. (COA) The operator implement dust abatement methods (water) or other approved methods to mitigate fugitive dust production from disturbed areas. Check with BLM before using chemical

dust suppressants. <u>Initials/Date: N. Dieterich 6/22/12</u>

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Onsite Notes, 3 Encana proposed pads West of DeBeque, April 11, 2012

Project files and photos at:
S:\Programs\Minerals\Oil & Gas\OPERATORS\EnCana\APDsNOS\3 Wells West of DeBeq 2012

Originally proposed as Pad E17 998 (COC-12645), this has been relocated and renamed*
Whittaker Flats Pad E17 998: SWNW Sec 17, 9S 98W, Mesa County, USGS Quad *Wagon Track Ridge*

First proposed in the middle of a small but nice sage flat (above), but will re-propose new location following onsite*

*UPDATE 5-30-2012, Pad E17 998 (D17 998)

Pad E17 998 has now been shifted per onsite discussion and is now proposed as the **D17 998**

Whittaker Flats Pad D17 998: NWNW Sec 17, 9S 98W, Mesa County, USGS Quad *Wagon Track Ridge*

Following the onsite in April 2012, Encana relocated the proposed pad per BLM direction and onsite discussions. They emailed new location plans to us on 5/30/2012. The relocated pad would still affect part of the sage flat, but it is off to the edge of it and tucked behind a low ridge with PJ on it that will hide the pad pretty well from MCR V.2. This situation is readily visible in the map projects, when viewing the aerial photos that clearly show the sage flat. The map project also shows where the orig proposal would have put the pad; we could discuss it as an alternative, if desired.
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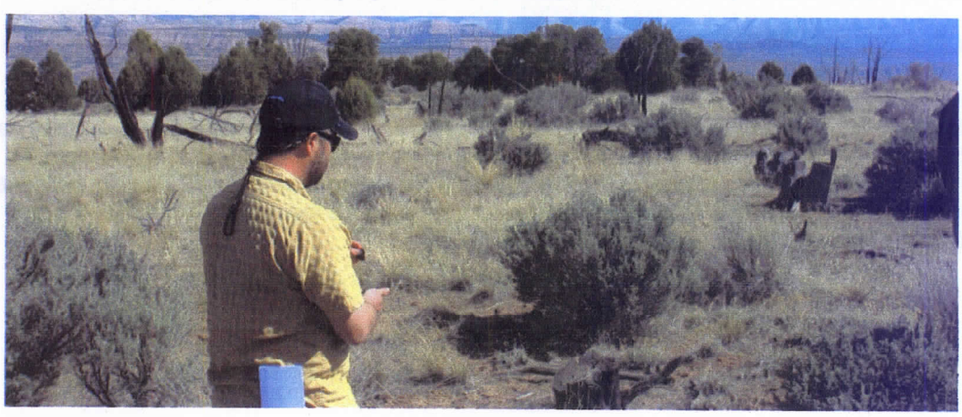
Proposed disturbance is 5.76 acres (includes cut/fill slopes, stormwater BMPs), with a working pad surface of 500 x 350 feet. This is a pretty big pad for a single well, which is all that is initially proposed, since this is an exploratory project. However, it is a horizontal well and might require a bigger rig footprint since the well bore would be so long. We will see. Discussion at the onsite did include the BLM limiting pad size/ disturbance at time of first well, unless Encana submitted multiple APDs to justify larger pad size. Either way, NEPA should analyze for largest size pad, about 6 acres, as now proposed, then a Decision could require a smaller initial footprint with possible expansion later if the first well proved productive. No new disturbance to speak of for pipelines or access, since existing access would suffice.

Pad A36 999 (COC-51116)
Whittaker Flats Pad A36: NENE Sec 36, 9S 99W, Mesa County, USGS Quad *Circle Dot Gulch*



Access crosses some private lands in Sec 30, 9S 98W. Get certification of access agreement with APD.

6700' elevation. Sandy soils. Encana will do soil tests and Heather will provide when available.
Deer Park burn – 1994. Fire seeding was done here, per GIS layers.
Proposed pad abuts existing old Maralex pad/well Cameo Federal 1-36 (COC51018)
Deer and elk scat.
Veg list: old crust in places, lupine, crested wheat, needle and thread, Indian rice grass, mustard (occ), rabbitbrush, pussy toes, mariposa lily/death camas(?), juniper, poas, bitterbrush, piñon, juniper, clover, lomatium (?), western wheat, pubescent wheat, curly cup gumweed (occ), snakeweed, prickly pear, mule's ear sunflower, low (black?) sage, big sage, phlox, rock goldenrod, big brome, fillaree (occ). Veg is in great shape and will provide good topsoil and seed bank. Interestingly, a stand of big Ponderosa pines is located NNW of proposed disturbance – no impacts proposed. See more photos in project files.

A new pad is proposed next to the old Maralex pad, but decided at onsite to re-occupy previous disturbance if at all possible. Well appears shut-in (separator disconnected). Encana would have to temporarily plug and move existing (ratty) facilities off site. They think they can work it out with Maralex, and will follow up. The pad would be rotated clockwise, with the west-ish edge generally along the existing road. Encana's facilities would be installed in same area used for them now – good cut slope, with well contoured and re-vegged berm above it. When/if that area will not suffice e.g., if multiple wells are drilled and a tank battery is needed, add'l facilities would be installed in direction of Ponderosas, but we would write a COA to stay away from them (just in case). At the time APDs are submitted, BLM would expect the plats/pad drawings to reflect these changes, at which time we may want to re-visit the site. I will inform the IDT as things evolve.*

***UPDATE 5-30-2012**

This A36 pad has now been shifted per onsite discussion and is now proposed to incorporate the old Maralex pad disturbance into the new proposed disturbance. It does not appear to have been rotated clockwise as discussed at onsite. Pad corner 4 has been rounded to avoid trees, per onsite direction. A revisit is probably called for, since it is hard to tell from the plats if the redesign is exactly what was discussed at the onsite. I will send out invites when I go, or you can let me know now if you are interested for sure.

Proposed disturbance is 5.66 acres (includes cut/fill slopes, stormwater BMPs), with a working pad surface of 500 x 380 feet. This is a pretty big pad for a single well, which is all that is initially proposed, since this is an exploratory project. However, it is a horizontal well and might require a bigger rig footprint since the well bore would be so long. We will see. Discussion at the onsite did include the BLM limiting pad size/ disturbance at time of first well, unless Encana submitted multiple APDs to justify larger pad size. Either way, NEPA should analyze for largest size pad, about 6 acres, as now proposed, then the

Decision could require a smaller initial footprint with possible expansion later if the first well proved productive. No new disturbance to speak of for pipelines or access, since existing access would suffice.

Pad K18 998 (COC-12645A)

Whittaker Flats Pad K18 998: NESW Sec 18, 9S 98W, Mesa County, USGS Quad *Wagon Track Ridge*

Pad designed to eventually accommodate up to 8 wells, but only 1 planned for sure. Discussion included BLM possibly limiting pad size/ disturbance at time of first well, unless multiple APDs submitted to justify larger pad size. To be determined. Either way, analyze for largest size pad, about 4 acres, as now proposed. Encana may want to build fresh water pit on pad after drilling, maybe pipe water to it for completions – they don't know yet. Roads/pipelines likely need ROWs if not unitized, but Enc says Bob Hartman already has paperwork for planned Unit. ROWs unlikely to be needed.

This is another pad proposed next to an existing shut-in(?) Maralex well 1-18JC permitted in 1981. Considered ways to expand the old one or re-occupy parts of it, but country doesn't lend itself well and

30-year reveg is successful, w/ big shrubs. Couldn't find a way to shift pad any better to minimize disturbance.
Frac' water could be brought in by temporary surface line or a fresh water pit might be built on the pad (per onsite discussions). However, the most recent drawings do not show a fresh water pit. When the APD is submitted, the Surface Use Plan of Operations (SUPO) will tell us how they plan to move their water and what the sources are – Encana generally tries to use as much recycled water as possible.

Proposed pad abuts old one, stepping down across reveg fill slope w/ sage and rabbitbrush w much cheat understory into mixed sage and PJ with less cheat in understory. Drainage patterns across this section of country generally SSW to NNE, with some swales and small ephemerals to be impacted by pad. As existing road already interrupts catchment from above, no major water flows to manage. One drainage would be diverted around SE end of pad, between new and old pads, to rejoin its channel below new pad. See more photos in project files.

Veg removal proposed by hydro-axe, to be removed w/ topsoil – told them that's our standard anyway. Will berm at perimeter as possible, but topography won't allow full perimeter berming.

Old seed mix included crested/western wheatgrasses, 4-wing and needle-and-thread. It's all there and successful – no need for more non-natives, tho. Sandy soils.

Veg list: mature piñon juniper, old crust in places, crested wheat, needle and thread, galleta, rabbitbrush, pussy toes, Indian rice grass, poas, vetch, phlox, Cryptantha, claret cup cactus, death camas, poas, bitterbrush, western wheat, pubescent wheat(?), curly cup gumweed (occ), snakeweed, prickly pear, mule's ear sunflower, big sage, phlox, rock goldenrod, penstemon. Veg is in good shape and will provide good topsoil and seed bank. More cheat near existing disturbance.

Table 1– Potentially Impacted Resources

Resources	Not Present On Location	No Impact	Potentially Impacted	Mitigation necessary	BLM Evaluator Initial & Date	Comments
PHYSICAL RESOURCES						
Air and Climate	☐	☐	☒	☐	ND 6/22/12	Dust suppression
Water (surface & subsurface, floodplains)	☐	☐	☒	☒	ND 6/22/12	Stormwater management
Soils	☐	☐	☒	☒	ND 6/22/12	Stormwater management
Geological/Mineral Resources	☐	☐	☒	☐	DSG 6/12/12	Coal and gas.
BIOLOGICAL RESOURCES						
Special Status Plants	☐	☐	☒	☐	JT 6/7/12	
Special Status Wildlife	☐	☐	☒	☐	JT 6/7/12	
Migratory Birds	☐	☐	☒	☐	JT 6/7/12	Depends on timing
Other Important Wildlife Habitat	☐	☒	☐	☐	JT 6/7/12	Veg treatment area 0.5 mile west
Vegetation, Forestry	☐	☐	☒	☒	JAM 7/9/12	BMP's and mitigation should cover issues
Invasive, Non-native Species	☐	☒	☐	☐	JESC for MT 4-11-12	Company has good existing IWM plan
Wetlands/Riparian Zones	☒	☐	☐	☐	CARS 6/13/12	None observed at